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Elements of ✱ the Degree-Day

For the Newcomer—setting up a System

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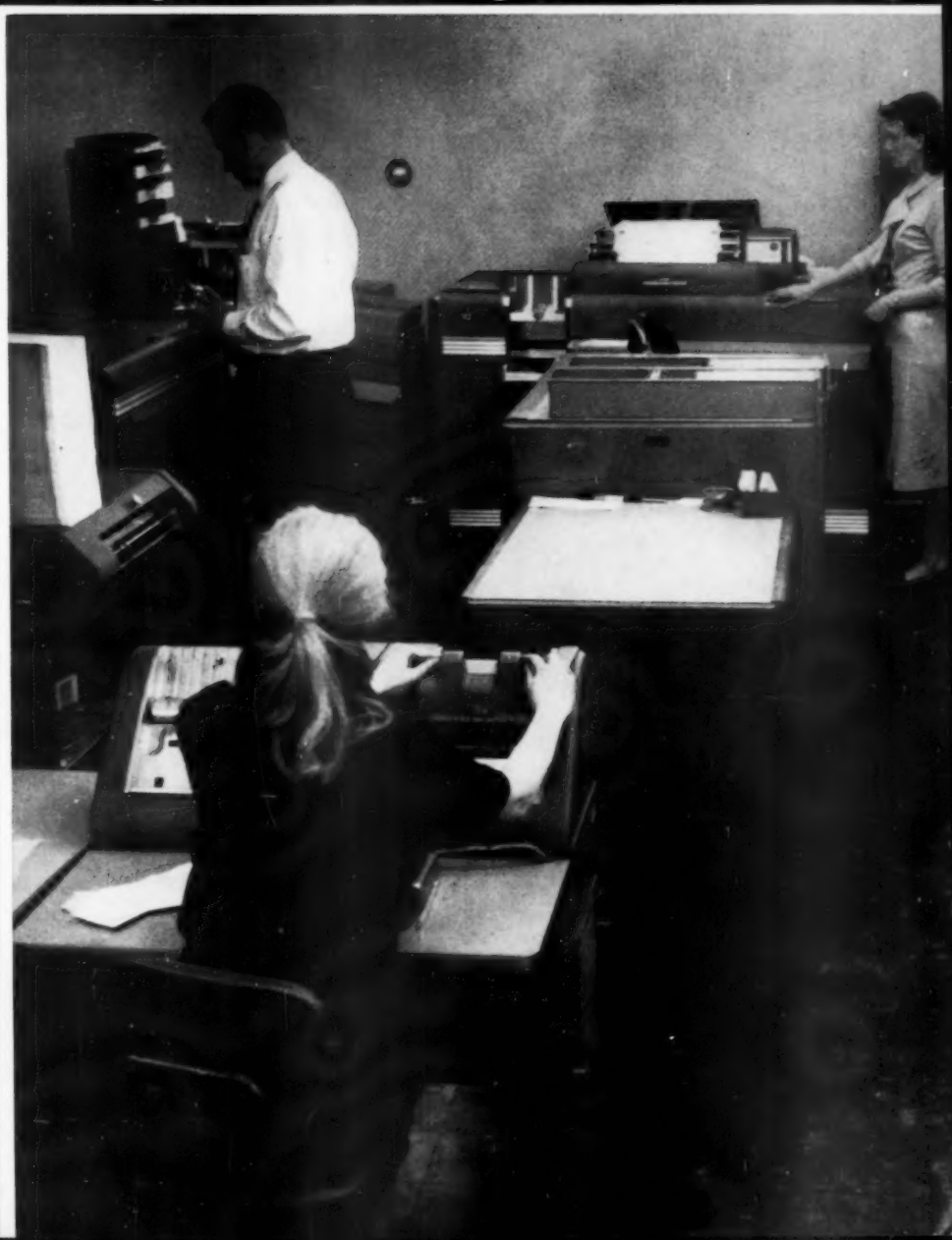

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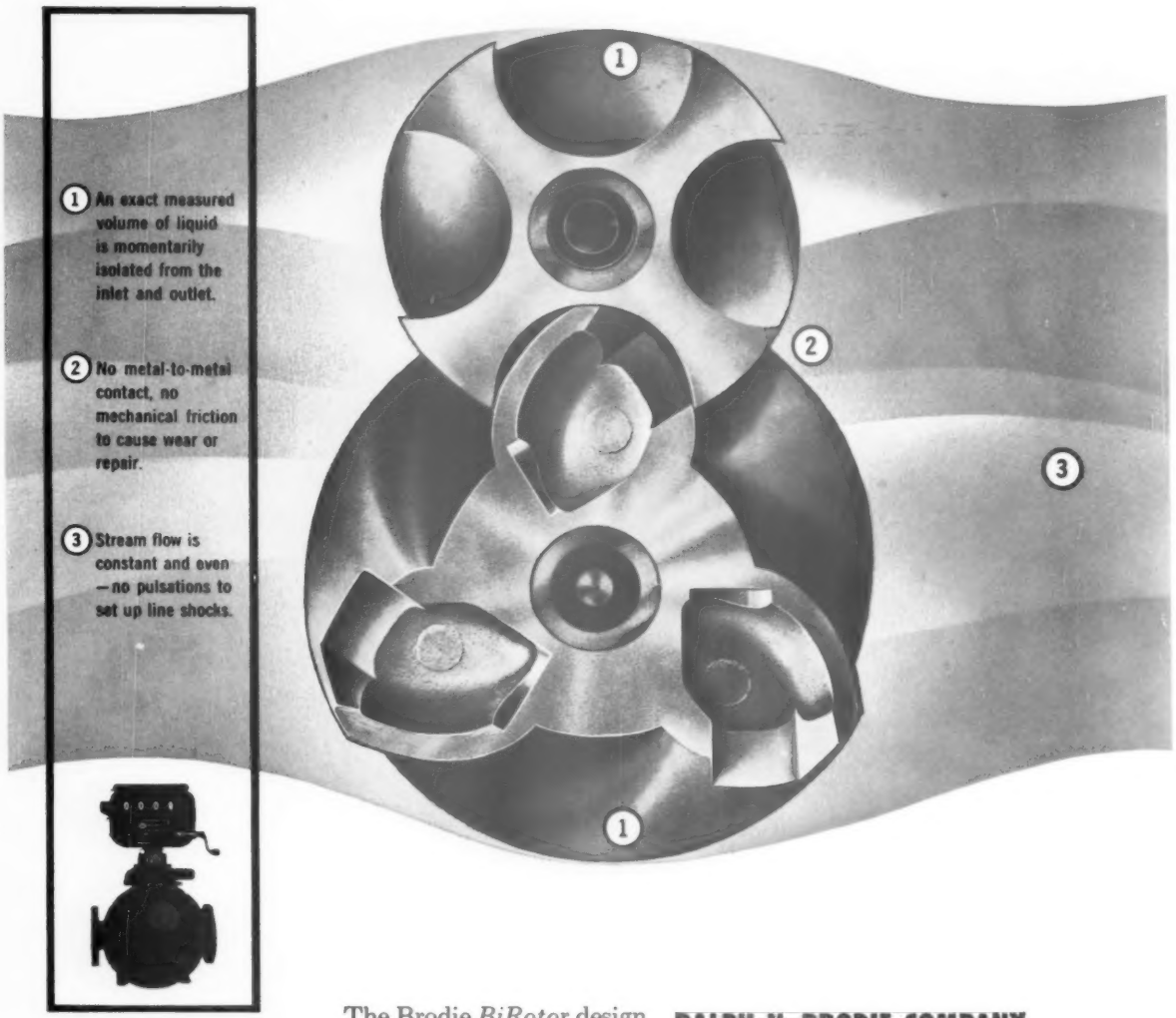
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1
2
3
1

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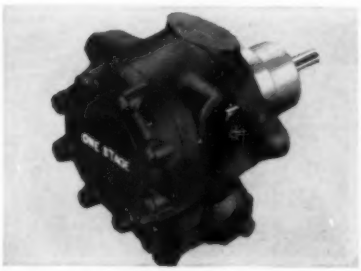

An estimated 9 billion gallons of fuel oil are pumped each year through the nozzles of more than 6,000,000 oil burners equipped with Sundstrand fuel units.

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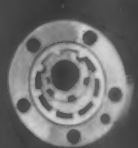

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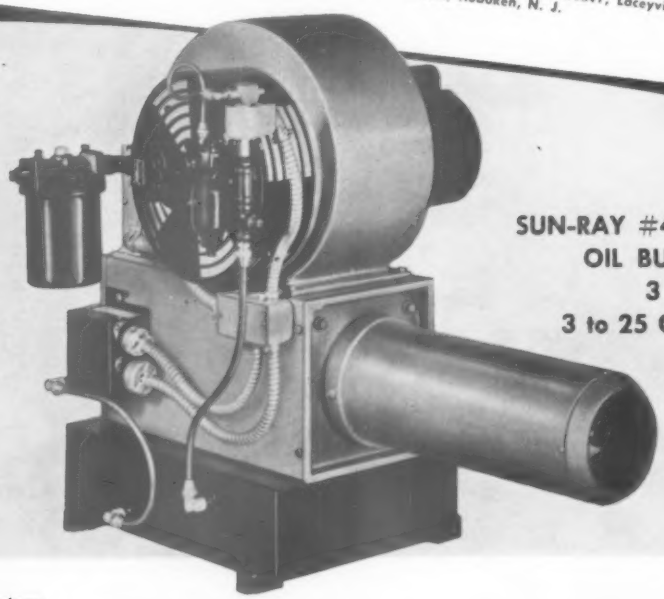

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AUGUST 1960

VOLUME 19 NUMBER 8

Editorial, circulation and advertising Office: 2 West 45th St., New York 36, N. Y.

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ROBERT GRAY, *Editor*
Bert Dunphy, *Managing Editor* John W. Schulz, *Technical Editor*
V. M. Douglas, *Western Editor* Margaret Mantho, *Assistant Editor*
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Ruth Wertheimer, *Advertising Production Manager*

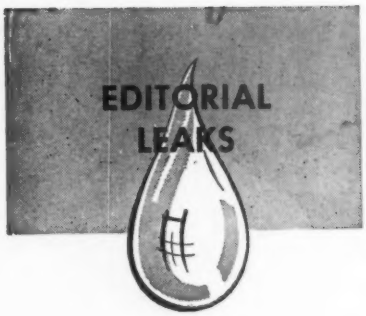
Larry Alles, *Midwest Manager*
Room 200 *Chicago 4, Ill.*
224 S. Michigan Ave. *Phone: Wabash 2-9548*
Pacific Coast Representative: Don Harway
1709 West 8th St., Los Angeles 17, Cal. Phone: Hubbard 3-5141

Among other things . . .

There's a good deal of technical information in this issue's feature section. Stanley C. Paterson outlines some boiler developments and refinements, which are interesting and effective; see page 59. Then in an article, "Stack Losses are important!, which starts on page 64, the point is made that the wise—and thorough—serviceman uses combustion testing instruments to check and set every job at its highest efficiency.

There's also a complete description of White-Rodger's Kwik-Sensor flame detector, which is burner-mounted and responsive to radiant rays from the oilburner flame. And, also, there's considerable more detail on the oilfired snow melter developed by Esso. See page 70.

Cover photo: Hoosier Coal & Oil Company's modern machine accounting department. The firm has recently installed an IBM data processing system, which handles degree-day and accounting procedures for the firm's 20,000 customers in the Indianapolis, Ind., area.



WHAT'S HAPPENING to the new home market? Surely there are many millions of families that haven't bought one, but maybe they are not sure they want to.

Perhaps the suburban congestion has become sufficiently irritating, particularly in the rush hours, so folks are marking time to be sure they want to leave the old house in town or the apartment.

Of course, that's all conjecture, but, whatever the reason, the Government figures have shown that in the first four months of this year the number of new housing units started was 20.7% below the same period of last year. That is quite a shock even though it will be quite a few months before it is reflected in heating installations.

Maybe as an industry we are fortunate in not having a very large share of our total equipment sales in the new home market, particularly compared to other automatic fuels. Even so, we need new home business to keep growing.

By way of compounding the felony, the figure just quoted is for the nation as a whole and the situation is worse in our strong oilheating area. In the Northeast, the new home starts in that period were down by 36.6%, in the Midwest by 33.9%. These are the prominent oilheating areas.

In the South the drop was only 12.1% and in the West the decline was just 4.8%. Those latter two areas are pretty much dedicated to gas and electric heating. These trends are going to be mighty interesting to observe.

The percentages quoted are based on a combination of private and public housing and they refer to dwelling units rather than single family homes. At the same time, any building with dwellings is going to use fuel even though it would be a heavy residual, so we can only be very much concerned because of the effect on total sales of our form of energy.

ON SEVERAL occasions we have had calls or correspondence about the growing habit of gas utilities getting rate increases for domestic or kitchen uses while at the same time getting decreases in space heating rates. This has been called to our attention a number of times in connection with the Brooklyn utility, but no one gave us the specific figures.

Now we learn, thanks to the Anthracite Institute, that a similar situation exists in Scranton, Pa., where the city council has issued a formal protest with the public utility commission of the state. The new rates have not gone into effect, but the protest points out that the local gas company is seeking to collect an additional $144,000 a year from its non-heating customers while allowing a decrease of $115,000 a year to those using gas for domestic space heating.

In a classic understatement, the Council's appeal points out: "The fairness of such an adjustment is open to question."

This is an old story. It has been going on for years. Many things that gas utilities do in the interest of enlarging their space heating load are open to question including, in many areas, quite unreasonable subsidies.

Franchised monopolies are necessary because of the enormous investment and capital facilities, but they do gain powers which are often used unfairly in competitive markets. There is a very familiar quotation: "Power corrupts—absolute power corrupts absolutely."

LAST WINTER'S scandals about the Brooklyn fueloil dealers who short changed customers had a germ of truth, but pretty small for the publicity given the disclosure. Only two dealers were finally convicted, but their sentences were not publicized.

A very interesting point about the whole scandal was the way the general public yawned. The Oil Heat Institute of Long Island, which is doing the largest advertising and publicity job on the Island, and thus is best known to the public kept an interesting tally.

The office had seven calls of complaint, or at least eyebrow raising, from consumers, and it had 167 calls from dealers who were sure that the industry was headed down the drain.

IN SPITE of the sagging stock market and slow business in many lines, the outlook is still good for the decade of the sixties in the opinion of businessmen smart enough to be considered.

Elmo Roper, who heads a prominent research firm, surveyed 83 important members of the New York Stock Exchange and 161 individuals from the American Economic Association, which includes the top economists of the country. He asked several questions about the coming decade and here are a few of the answers:

Fifty percent of the Wall Streeters say we'll have a boom ranging from moderate to large, and 62% of the economists feel the same way. Only 6% of both groups predict declines. The remainder in each group expect relative economic stability.

Another interesting point has to do with whether business cycles have been modified to the point where a serious depression is no longer possible. Here 51% of the Wall Streeters and 65% of the economists hold that view.

Asked whether the degree of inflation in the past five years has been excessive or reasonable, 72% of Wall Streeters and 45% of economists say it was excessive; 21% of Wall Streeters and 51% of economists say it was reasonable.

ELECTRIC MOTOR CARS may some day be troublesome for gasoline men. There are about five now in small production, and one of them is being made by the Eureka Williams Co., of all people, and it's quite good looking.

Bob Gray

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fueloil & oilheat

GOVERNMENT INFLUENCE ON FUELS

by James M. Collins

WASHINGTON—A whole new barrel of oil issues has been opened up now with the chance that Senator Kennedy (D, Mass.) will be the next president of the United States, for his views on a number of vital issues dealing with oil and gas are well-known, on the record in Congress. And, his position on several important petroleum-coal matters stands at direct variance with the views of the GOP standard-bearer, Vice-President Richard Nixon.

If Kennedy should be elected in November, there will be virtually no chance that a natural gas bill can be enacted into law in 1961—or for many years. Kennedy voted against the Harris-Fulbright Bill in 1956, and he could be expected to oppose such a bill if he were in the White House.

The Massachusetts senator has also voted in favor of amendments offered to various tax bills to reduce the 25.5% oil depletion allowance for producers.

However, it must be said that Kennedy has never taken the initiative in Congress to move against the depletion allowance, or to hobble oil-gas producers in any way. Basically, Kennedy is believed conservative in his views on fiscal and business matters (as contrasted with such "liberals" in the Senate as Humphrey, Douglas, Proxmire, and others, who are dedicated opponents of the industry).

But, there is one issue on which Kennedy has taken the initiative, very vigorously, and this one is perhaps now the sharpest of any facing the petroleum industry, and which oil men now seem to fear the most. This involves the possible creation of a "national fuels policy," which oil men have been fighting very strongly in Congress over the past year.

A year ago, coal men had a resolution introduced in both the Senate and House, providing for the establishment of a joint congressional committee, which would have been directed to hold extensive hearings and specifically consider the "optimal allocation" of fuels (in other words, the "end use" of fuels) and to recommend any other legislation which was believed to be needed.

That resolution died on the vine, due to the all-out opposition of oil men and their friends in Congress. This year, the resolution was toned down, somewhat, to pull out the "end use control" approach, and still is awaiting action in the House Rules Committee. There has been no action in the Senate at all, so far this year.

The coal industry's resolution has two principal aims: (1) To reduce still more imports of foreign residual fuel oil, and (2) to prohibit low-cost sales of natural gas by the gas pipelines to industrial consumers (which are not under the control of the Federal Power Commission).

In his West Virginia primary campaign, when Kennedy was fighting desperately to win over Senator Humphrey, he made a number of commitments to coal industry supporters. One—in writing—was that if he were elected president, one of his very first tasks would be to get down to work on the establishment of a national fuels policy.

In line with Kennedy's apparent strong stand on vital issues of deep interest to the petroleum industry, and particularly to domestic oil and gas producers, are a number of chilling pledges in the platform adopted by the Democrats at Los Angeles.

The platform states unequivocally that "we support the establishment of a national fuels policy."

Also, the party's platform declares that there is a need to "close tax loopholes" and specifically mentions "inequitable" depletion allowances—but without naming oil and gas.

Nixon's Stand Is Contrasted

Compared with Kennedy, however, the GOP standard-bearer this fall, Vice-President Nixon, can be counted a strong supporter of the domestic oil and gas producers. Several weeks ago at a press conference in Texas Nixon, when asked about his views on the depletion allowance and a gas bill, said that he favored a gas bill and backed the depletion allowance, although frankly admitting that this stand probably was not politically popular. On oil imports, however, Nixon would not commit himself to supporting, or widening, the present mandatory program on oil imports.

Short Session May be Rough

The upcoming short session of Congress in August—with the Senate reconvening Aug. 8 and the House on Aug. 15—may be rough on the big political issues, with both parties running hard, and both of the candidates on the Senate floor. But, the session is likely to be loud without being fruitful. There will be mostly a lot of talk and not too much action—at least when it comes to oil and gas.

There are so many pressing problems in other areas, that these will monopolize the spotlight in the August session—such as minimum wage, school construction, a medical program for the aged, housing, and others, that have widespread political sex-appeal.

The oil-gas depletion could come up — but Senate Majority Leader Johnson (D., Texas) no doubt will fight hard to keep it from a vote—for it would split the Democratic Party north and south. Otherwise, there is little on the agenda of immediate impact on the petroleum industry.

Agency Actions More Important

Of far greater importance to the oil and gas industry will be decisions made this fall by the Interior Department—on oil imports (a big increase is foreseen in the residual import quota in September) and by the Federal Power Commission, when it hands down its decision in the Phillips Case. This decision is expected to set a pattern of uniform standards for handling producers' gas prices (perhaps based on an area-pricing philosophy), with enough leeway to provide needed incentives to producers so that they will maintain adequate supplies.

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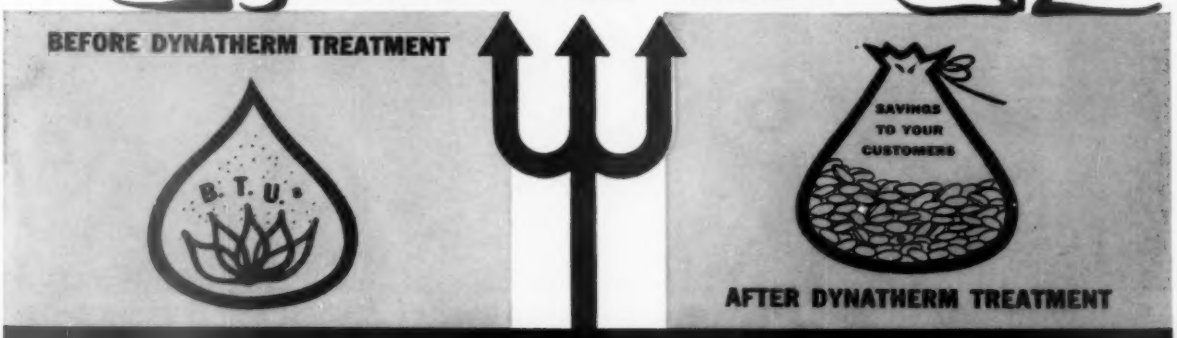

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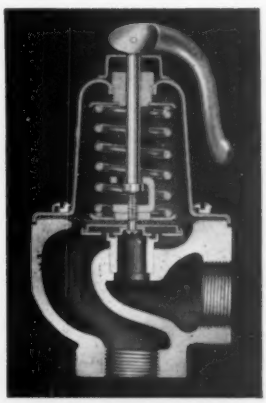

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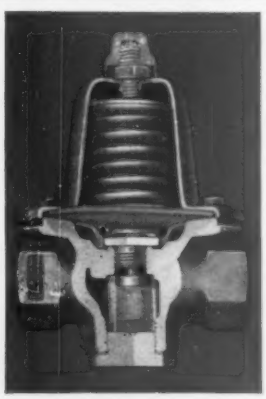

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The Anti-Siphon Check Valve feature, now included as standard on all B&G Reducing Valves, introduces an entirely new principle of check valve operation. It prevents back flow of water from a system, which might occur when city water pressure falls below the system pressure. A simple, yet extremely effective device, the Anti-Siphon Check Valve is less affected by dirt than are ball and flapper type checks.

Write for your copy of "B&G Relief and Reducing Valves," Bulletin No. HZ-856A

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Oilheating & Airconditioning
MERCHANDISING NEWS

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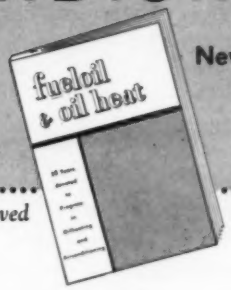

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Monthly oilheating Trends

JUNE INSTALLATIONS of domestic oilheating equipment are estimated at 36,089 compared with 41,927 in May and 44,312 in June last year. This is the first significant setback at any time this year. Whether it was caused by unsettled conditions in the political and economic areas remains to be seen.

We are more or less holding our own with gas equipment in the matter of percentages. The newest figures for oil heat show six months installations of 245,707 compared with 249,274 last year or a decline of 1.4%. Gas heating installations for five months are estimated at 393,920 compared with 400,150 in five months last year for a drop of 1.5%. The new home market is down only moderately, although it will probably become a little worse later.

In the first four months of the year, new home starts were off about 21%, but in the important oilburning areas of the Northwest and Midwest they were off 35%. We have not been hurt much by this decline up to now because our figures are based on installations in homes started earlier.

By types of installations the June figures show: new homes, 12,450; replacements of old oilheating, 11,043; conversions from other fuels, 12,596.

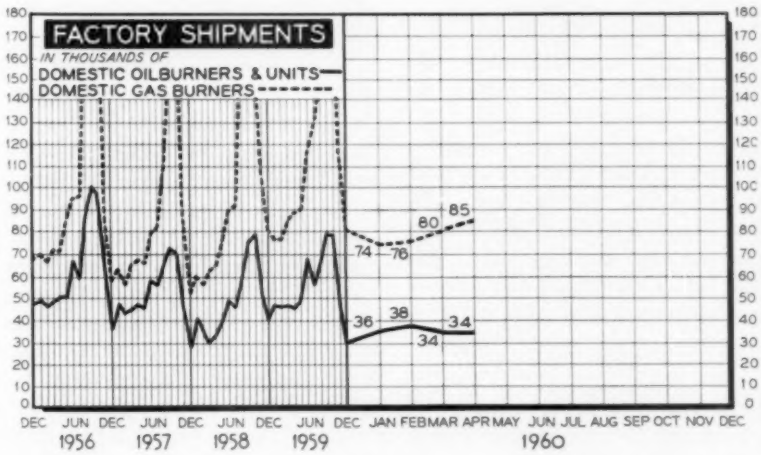
For the six months, the comparisons are: new homes, 83,106 this year vs. 85,758 in 1959; replacements, 91,115 compared with 93,517; and conversions from other fuels, 71,486 as against 69,999.

One bright spot in the June picture was airconditioning sales. Fueloil and oilheating companies installed during the month an estimated 8,722 central airconditioning jobs. Water heaters showed up well also with our group installing 3,379 of the pressure burner variety.

Oilheating Stocks: Dealers were holding at the end of June approximately 50,596 domestic separate oilburners and units. This compares with 52,716 a month earlier and with 60,131 a year earlier.

Tank Stocks: On June 30, dealers had 39,537 consumer tanks compared with 33,916 on May 31 and with 47,729 at the close of June last year.

By sizes, the June 30 tanks show: 220 to 330 gal., 37,416; sizes 550 to 675 gal. 1,340, and sizes 1,000 and larger, 781.



June Minimum Retail Prices Key Dealers

	June Avg.	*May Avg.*
Separate Burners	$312	$313
Boiler Burners	744	745
Furnace Burners	626	627

Price Index: Separate Burners 1947-49 is 100%

WHOLESALE

June	94.6	Six months ago	94.4
May	94.5	Year ago	95.6

RETAIL

June	90.9	Six months ago	91.9
May	90.8	Year ago	92.2

Shipments of Oilburners and Units
(Including Exports)

Adjusted to include manufacturers other than those reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	APRIL			FOUR MONTHS		
	1960	*1959*	*Percent Change*	*1960*	*1959*	*Percent Change*
Separate Burners	24,702	30,035	—17.8	104,621	126,896	—17.6
Boiler Burners	1,576	3,389	—53.5	11,207	11,225	— 0.2
Furnace Burners	7,434	9,086	—18.2	26,554	39,477	—32.7
All Domestic	33,712	42,510	—20.7	142,382	177,598	—19.8
Commercial	2,679	3,278	—18.3	11,308	11,169	+ 1.2
Total	36,391	45,788	—20.5	153,690	188,767	—18.6

What are the market Possibilities for domestic water heating with Oil?

WITH QUITE a lot of publicity and promotion on the separate oil-fired water heaters during the past five years, we made a check this month to see how much of a dent these have made in the total water heating facilities of the country.

The answer is that they have not been sold in the volume that their merit would warrant, but we are making some headway.

We asked the dealers various questions about the water heating practices of their customers. We can make some interesting comparisons with studies in earlier years, although the methods, or rather the categories and classifications, were somewhat different.

In the present study, we learn that 31% of all oilheated homes in the nation get their domestic hot water from a summer-winter hookup on boilers. Another 3% use a separate oil-powered water heater with pressure or rotary burners. Again 2% heat water with pot-type burners using kerosene or No. 1 oil. Thus, only 36% of our total oil customers heat water with our fuel.

Other Fuels

Another 45% use gas for water heating and the remaining 19% have electric water heaters.

In another study, back in April 1956 we asked rather what types of water heating were used in conjunction with the new oilheating jobs the dealer had installed during the year 1955. In other words, while today we have figures on their total oil customers as to water heating habits the earlier study was checking only the current new installations.

There we found that 34% used a summer-winter hookup, 1% had a separate vaporizing water heater, and 2% had a power burner water heater as a separate unit. During that year, 29% of the new oilheating jobs were in homes using gas for water heating and 28% were in homes with electric water heaters. A final 6% in that study were using oil to heat water in winter and other methods in the summer.

Then we had a still earlier study in June of 1953. In that one, the figures are based on all oilheated homes at the time rather than installations. Unfortunately, we did not ask the questions in the same detail as the present survey.

1953 Comparison

We did learn in 1953 that 33% of all oilheated homes had a summer-winter hookup on boilers. Another 4% were using separate oil water heaters, but we made no division between vaporizing and power type oil-burners on these heaters. At that point seven years ago, 17% of all oilheated homes had a divided loyalty because they used oil for water heating in the winter and some other fuel in the summer. Again we found that 43% of the homes having oil heat were using either gas or electric fuel for hot water on a year round basis, but we did not make a separation between the two fuels. Also, in that analysis there were 3% of oilheated homes having water heating systems other than those that we have described. These would be hard to identify but probably included the little anthracite monkey stoves on a water heater which was popular 20 years ago.

Getting back to our present analysis, we asked the reporting group how many extra gallons of oil do they estimate are used for water heating for the summer-winter hook-up. The answer is an average of 295 gal. per year. For a separate oil-powered water heater, their experience shows that 343 gal. of oil are used on the average.

The ratio between these two throughout the several regions of the country is fairly constant and it is quite apparent that the separate burner water heater uses a little more oil than the summer-winter hookup. Although, it may also provide more hot water.

The answer may be that people buying separate water heaters do so because they have need for plenty of hot water. These would be families with several children or people accustomed to a lot of entertaining.

Sales Effort

We asked the dealers if they have made much effort in the past year to sell the separate water heaters to oil customers. Just one-third of them say that they have, and 4% say that they have tried house to house solicitation. But when we asked if the house to house salesman sold enough water heaters to make a satisfactory living, the answer was 100% no. The indication then would be that these must be sold on a part time basis by present fueloil salesmen or oilheating men. A full time man on water heaters doesn't pay.

The price at which these separate water heaters was sold was surprisingly high though apparently the dealers feel that they need that much money. Nationally, the average selling price installed with a 1 gph burner and a 30 gal. capacity is $325. There were sectional differences. New England showed $323; Mid-Atlantic showed $301; the Midwest showed $365 although not many were sold and this was probably influenced by the higher priced units.

In building up the cost on these items, the dealer starts by paying $192 for the heater including delivery to their shop. Again there are sectional differences: New England pays $172;

Mid-Atlantic pays $174 and the Mid-west pays $235. Again this makes us feel that they are dealing more with the Timken, Oil-O-Matic and Bock types rather than the newer products. There is also the thought that some dealers concentrate on little larger tanks for small commercial purposes.

The question naturally arises as to what the customer thinks of these separate oil-powered water heaters. There are a few complaints around the industry, but apparently they are mostly from dealers with little experience with these heaters. Strangely enough the dealers in this group who are selling these heaters vote 100% satisfaction at the consumer level.

Then they were asked if the customers get all the hot water they want. Here again the answer was 100% yes.

The final question inquired about what percent of all oil companies in the particular dealer's market are actively pushing water heaters including the use of salesmen. This does not necessarily mean exclusive salesmen. The answer is 14%. The high spot is Mid-Atlantic with 27% of companies while in the Midwest and Pacific Northwest the percentage was very low.

Some interesting comments this month were these:

"We use the Waltham heater with a Shell head burner—it is terrific. Every customer that previously had hot water difficulties is wild about the unit, but you have to pick your spots to sell them. It is impossible to compete against a gas hot water heater if the customer is only looking for price—get the cost of these things down where they can compete and the home owners will end up selling them for you." . . .

"The average home owner buys the lowest priced water heater he can get—he has no surplus capital." . . . "Average family still prefers gas-fired water heaters—they realize that the oil-fired is less expensive to operate but feel that it would take too many years to make up difference in installation cost." . . .

"I think we make the mistake of making a profit—we should sell these at about cost." . . . "Oil-powered hot water heaters are the best item we have had to sell for years." . . .

"We have been getting much more response from our oil-powered hot water heater advertisements than our advertising on any other equipment. Home owners are definitely dissatisfied with gas and electric water heaters."

"Nothing on the market can touch a No. 2 fuel water heater. One 30 gal. heater takes care of a three-family house. We are handicapped on selling because we are not licensed plumbers. Our associations are slow in getting us special permits for installing tankless heaters and oil-fired water heaters." . . .

"Every installation made with a power burner water heater has resulted in a satisfied customer; we are supplying loads of hot water for four to six apartments with 1 gal. fire and 30 gal. storage tank. Believe we will sell about a hundred a year."

Oilburner Permits*

JUNE 1960		Six Months 1959	1960
2	Albany, N. Y.	5	5
25	Baltimore, Md.	117	120
56	Bridgeport, Conn.	278	259
2	Columbus, O.	47	6
23	Detroit, Mich.	183	140
42	Elizabeth, N. J.	144	138
19	Freeport, N. Y.	87	81
34	Hartford, Conn.	429	218
8	Irvington, N. J.	99	55
..	Meriden, Conn.	164	..
14	Milwaukee, Wis.	107	81
..	Minneapolis, Minn.	108	..
..	Montclair, N. J.	44	..
1	Morristown, N. J.	10	10
29	Mt. Vernon, N. Y.	180	147
..	Newark, N. J.	298	..
24	New Bedford, Mass.	247	329
..	New Haven, Conn.	329	..
11	New Rochelle, N. Y.	69	56
29	Norfolk, Va.	123	148
..	Omaha, Neb.	35	..
3	Orange, N. J.	14	27
10	Passaic, N. J.	24	24
..	Paterson, N. J.	94	..
85	Philadelphia, Pa.**	497	509
43	Portland, Me.	212	185
101	Portland, Ore.	478	441
4	Poughkeepsie, N. Y.	47	45
20	Providence, R. I.	177	163
53	Richmond, Va.	185	290
24	Roanoke, Va.	299	193
17	Rochester, N. Y.	230	207
1	Rockville Centre, N. Y.	18	14
..	Salem, Mass.	139	..
..	St. Louis, Mo.	236	..
5	St. Paul, Minn.	36	34
6	Schenectady, N. Y.	35	33
20	Spokane, Wash.	156	161
85	Springfield, Mass.	280	302
6	Stamford, Conn.	91	51
42	Washington, D. C.	128	212
1	White Plains, N. Y.	68	36
30	Wilmington, Del.	57	101
60	Worcester, Mass.	358	267
2	Yonkers, N. Y.	70	47
..	Matched Totals	5,585	5,135
	Percent Change		—8.1

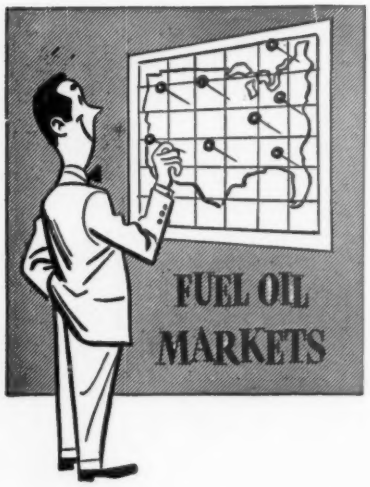
*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

**Courtesy of "Philadelphia Inquirer."

Where is the New home Market?

	No. of Permits Issued April	4 Mos.
Alabama	945	3,431
Arizona	1,574	6,621
Arkansas	279	1,026
California	18,460	67,774
Colorado	1,480	4,723
Connecticut	1,776	5,085
Delaware	179	870
District of Columbia	348	766
Florida	6,154	25,019
Georgia	1,761	6,290
Idaho	166	414
Illinois	4,337	13,583
Indiana	1,755	4,104
Iowa	803	1,718
Kansas	615	1,889
Kentucky	832	2,056
Louisiana	836	3,439
Maine	170	295
Maryland	2,189	6,603
Massachusetts	1,705	5,497
Michigan	2,717	7,898
Minnesota	1,417	3,100
Mississippi	346	1,191
Missouri	1,850	5,069
Montana	103	357
Nebraska	657	1,281
Nevada	592	1,688
New Hampshire	184	398
New Jersey	2,926	8,196
New Mexico	505	1,725
New York	6,803	19,314
North Carolina	979	3,307
North Dakota	202	303
Ohio	5,722	13,528
Oklahoma	999	2,842
Oregon	924	2,656
Pennsylvania	2,680	9,244
Rhode Island	322	877
South Carolina	216	837
South Dakota	160	329
Tennessee	1,144	5,017
Texas	5,394	20,069
Utah	569	1,919
Vermont	30	63
Virginia	2,543	8,510
Washington	1,461	4,876
West Virginia	151	433
Wisconsin	1,939	4,846
Woyming	145	443

These figures are collected by the Census Bureau from selected area. They represent approximately 77% of all dwelling construction in the United States.



AT A SMALL group discussion of industry problems in the Midwest a few days ago, one prominent industry marketer asked if the others thought the price of No. 2 fueloil would go up by 2½¢ this fall. None of the others believed that it would, but they all felt that it would go up some extent. Certainly at least one cent in the early fall.

For whatever it is worth most industry economists are convinced that today's prices are too low to last over any significant period.

Fueloil distributors with substantial storage will most surely be filling their tanks well ahead of the start of the heating season. There was a Gulf Coast increase at Mid-July of around .2¢ which has not been reflected at the market level.

The price table this month, on the other hand, continues to show mostly declines from the previous month. These are quite prevalent along the East Coast with most drops showing .2¢ off at the tank wagon levels; some are down .3¢.

The Midwest was steady except for Detroit down a half cent at the tank wagon level.

Distillate Fueloils

PRIMARY STOCKS*
(Thousands of Barrels)
East of Rockies

	July 8 1960	July 10 1959
East Coast	43,761	47,049
Midwest	36,507	36,073
Gulf Coast	22,050	26,715
Total	102,318	109,837

*American Petroleum Institute.

Notice the price index chart. Fueloil is certainly looking more attractive from the consumer viewpoint even though it is not so good from the refiners'. This is particularly true when compared to the index of gas prices for space heating. They have jumped clear off of the chart.

Notice that the gas curve has been consistently upward and sharply upward for the past year. There's nothing in sight to indicate that gas costs will do anything but go up because field prices are steadily going up while the cost of building and maintaining pipelines follows a trend of all industrial costs. Not only that but interest rates are high and this affects financing costs for pipeline building.

The fueloil stock table continues to show improvement in the sense of less surplus product. Notice that we are running 7% below last year East of the Rockies. Even more significant, when you separate the East Coast and the Gulf Coast which serves Eastern markets we find that stocks are 11% below a year ago. The number of oilburners operating next season will be at least 3½% above the past season so the present inventory supply in relation to potential demand is even lower by an adjustment of that amount.

No. 2 Heating Oil
(Including No. 3 & PS200)

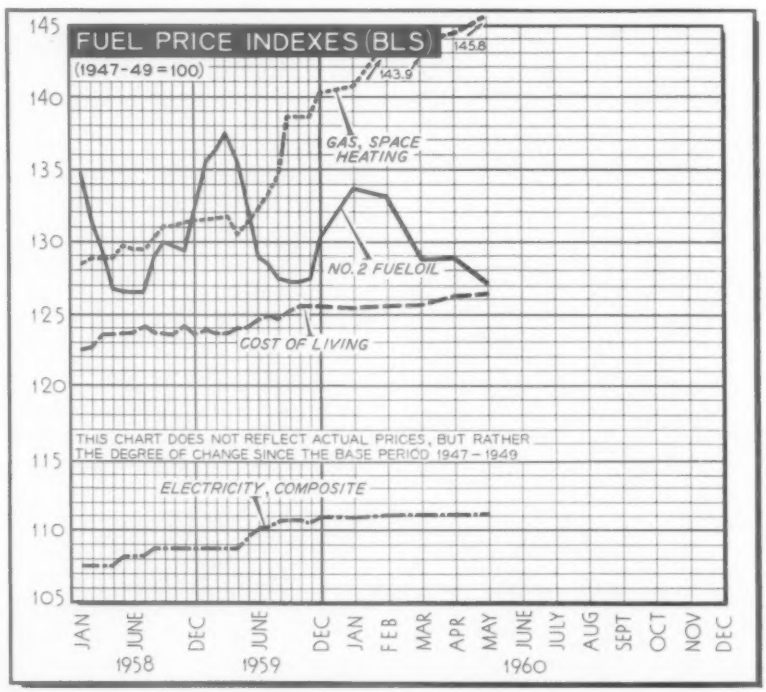
Price per gallon as of July 10, 1960

	Tank Car†	Tank Wagon
Portland, Me.	9.4	14.1
Boston	9.3	13.9
Providence	9.3	13.6
Hartford	9.55	13.9
New Haven	9.2	13.8
Syracuse	10.5	14.3
Albany	9.4	13.3
New York	9.2	13.3
Newark	9.2	13.2
Philadelphia	9.3	13.3
Baltimore	9.2	13.5
Wilmington, N. C.	9.8	13.4
Washington	9.8	13.8
Richmond	10.1	13.5
Charleston, S. C.	9.8	13.5
Chicago	9.0*	13.6
Detroit	10.5*	15.1
Cleveland	11.2*	15.6
Minneapolis	9.429	14.2
St. Louis	9.35	14.4
Indianapolis	9.89*	14.2
Milwaukee	9.235*	13.4
Des Moines	10.1	13.8
San Francisco	12.05*	14.8
Portland, Ore.	10.825*	15.1
Seattle	10.6*	15.2
Spokane	12.6*	16.8
Los Angeles	11.55*	14.3

Tank wagon prices shown are for maximum one-time delivery discounts.

*Delivered.

†Tank car prices are typically those paid by fueloil distributors as a purchase price. On the West Coast, this term more often indicates a retail sale to a large commercial account. This usually is a half cent below tank wagon price.



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- RCA SERVICE

New RCA Transistorized "Low Drain" Mobile Unit

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Looked at from any angle—performance, service, price—the new "LD" (Low battery Drain) 2-Way Radio is sensational news from the leader. Minimum tubes in the receiver, no vibrators in the power supply—they've been replaced by readily available stock transistors for long life and dependability! Transistors used only in circuits where long experience has proven they can give reliable performance. Your RCA representative will be glad to show you why the "LD"—dollar for dollar, feature for feature—is today's greatest 2-way radio value.

Heat drain reduces internal temperature of unit up to 40%, providing longer component life (case has wrap-around heat sink). Standby monitoring feature cuts battery drain to a mere 2¼ amps. With vehicle engine off, radio can be left on to receive incoming messages for long periods without impairing battery life—automotive cabling used exclusively for greater flexibility, positive contact, corrosion resistance. Five watts of audio power for greatest message intelligibility. Equipment easily moved from car-to-car—trunk or true-dash mount. Security sealed circuits clearly numbered to provide "road map" for fast, simple servicing—RCA Service Company technicians available to keep your equipment operating at maximum efficiency.

Mail coupon for further facts.

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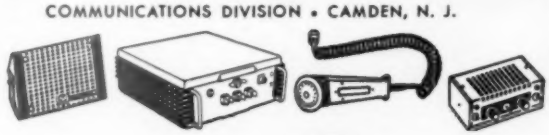

Fueloil & oilheat

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A First From Honeywell!

Cold Weather Selling Power Months Before It Happens!

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For the first time, you can combat the old "wait to the last minute" attitude in the heating business! You can now point to accurate, dependable cold weather forecasts, and really convince prospects of the need for a professional fall heating check-up.

Starting August 21, the Honeywell Weather Watch on NBC's popular Monitor Radio program will broadcast scientific winter-ahead weather reports coast to coast. Every weekend for 6 weeks, these reports will originate from the world-famous Krick Weather Center in Denver, Colorado. And each broadcast will give you just the information you need to beef-up your selling story—multiply sales and profits! Catch the broadcasts yourself. Sundays at 3:05 P.M., 4:05 P.M. and 5:05 P.M., New York time.

Plan now to tie-in with the Honeywell Weather Watch, and extend your selling season up to 3 full months! Ask your prime heating prospects from among the vast Monitor audience to get ready for winter early—to call you *before* the full force of cold weather is upon us. You'll find that nothing sells quite like long-range cold weather forecasts.

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- WINDOW BANNERS
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- NEWSPAPER MATS

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On Your Own Local Radio Station!

RELIABLE WEATHER FORECASTS FROM WORLD-FAMOUS KRICK WEATHER SERVICE

Dr. Irving P. Krick, President of Irving P. Krick Associates, Denver, Colorado, ranks as one of the world's outstanding meteorologists. With electronic computers and a scientific system of calculating rhythms in the weather, he has brought weather forecasting to a high degree of perfection. Dr. Krick's seasonal charts number in the hundreds, ranging from home builders to major corporations and the 1960 Winter Olympics. Almost all have received stories resulting from Krick predictions.

COAST TO COAST ON ALL THE MONITOR STATIONS

...—KOB
...—KSYL
...a.—WSAN
...ich.—WATZ
... Tex.—KVLF
...rillo, Tex.—KGNC
...lanta, Ga.—WSB
Augusta, Ga.—WBIA
Augusta, Me.—WRDO

Bakersfield, Calif.—KGEE
Baltimore, Md.—WBAL
Bangor, Me.—WLBZ
Baton Rouge, La.—WJBO
Battle Creek, Mich.—WBCK
Billings, Mont.—KGHL
Binghamton, N.Y.—WINR
Birmingham, Ala.—WAPI
Bismarck, N.D.—KFYR
Bluefield, W. Va—WHIS
Boise, Idaho—KIDO
Boston, Mass.—WEZE
Bozeman, Mont.—KXXL
Bristol, Tenn.—V.—WOPI
Buffalo, N.Y.—WGR
Butte, Mont.—KXLF

Cadillac, Mich.—WATT
Calais, Me.—WQDY
Charleston, S.C.—WTMA
Charleston, W. Va.—WKAZ
Charlotte, N.C.—WSOC
Charlottesville, Va.—WINA
Chattanooga, Tenn.—WDEF
Chicago, Ill.—WMAQ
Cincinnati, Ohio—WLW
Clarksburg, W. Va.—WBOY
Cleveland, Ohio—WJW
Columbia, S.C.—WIS
Columbus, Ga.—WDAK
Cumberland, Md.—WTVO

Dallas, Tex.—WFAA
Davenport, Ia.—WOC
Denver, Colo.—KOA
Des Moines, Ia.—WHO
Detroit, Mich.—WWJ
Douglas, Ariz.—KAWT
Duluth, Minn.-Superior, Wis.—WDSM

Easton, Pa.—WEST
Eau Claire, Wis.—WEAQ
Elkhart, Ind.—WTRC
Elmira, N.Y.—WENY
El Paso, Tex—KTSM
Eugene, Ore.—KUGN
Evansville, Ind.—WGBF
Fargo, N.D.—WDAY

...riz.—KCLS
...—WFDF
...la.—WIRA
Fort W...d.—WKJG
Fort Worth, Texas—WBAP
Fresno, Calif.—KMJ

Gainesville, Fla.—WRUF
Garden City, Kans.—KIUL
Globe, Ariz.—KIKO
Grand Rapids, Mich.—WOOD
Great Falls, Mont.—KXLK
Greenville, S. Car.—WFBC
Greenwood, Miss.—WGRM
Greenwood, S. Car.—WCRS

Hampton, Va.—WVEZ
Harrisburg, Pa.—WKBO
Harrisonburg, Va.—WSVA
Hartford, Conn.—WTIC
Hattiesburg, Miss.—WFOR
Havre, Mont.—KOJM
Hazleton, Pa.—WAZL
Helena, Mont.—KXLJ
Hibbing, Minn.—WMFG
Houghton, Mich.—WHDF
Houston, Texas—KPRC
Huntington, W. Va-Ashland, Ky.—WSAZ
Hutchison, Kans.—KWBW

Indianapolis, Ind.—WIRE

Jackson, Miss.—WJDX
Jacksonville, Fla.—WJAX
Johnstown, Pa.—WJAC

Kalispell, Mont.—KGEZ
Kansas City, Mo.—WDAF
Kingsport, Tenn.—WKPT
Knoxville, Tenn.—WATE

La Crosse, Wis.—WKBH
Lafayette, La—KVOL
Lake Charles, La.—KPLC
Lakeland, Fla.—WLAK
Lancaster, Pa.—WGAL
Lansing, Mich.—WJIM
Laurel, Miss.—WAML
Lewiston, Pa.—WMRF
Lexington, Va.—WREL
Little Rock, Ark.—KARK
Los Angeles, Calif.—KFI
Louisville, Ky.—WAVE
Lubbock, Texas—KCBD

Madison, Wis.—WIBA
Manchester, N. H.—WGIR
Mankato, Minn.—KYSM
Marietta, Ohio—WMOA
Marinette, Wis.—WMAM
Martinsville, Va.—WMVA

Medford, Ore.—KMED
Memphis, Tenn.—WMC
Miami, Fla.—WCKR
Milwaukee, Wis.—WTMJ
Minneapolis, Minn.—See St. Paul
Missoula, Mont.—KXLL
Mobile, Ala.—WALA
Monroe, La.—KMLB
Montgomery, Ala.—WHHY
Morgantown, W. Va.—WAJR

Nashville, Tenn.—WSM
Natchez, Miss.—WMIS
New Orleans, La.—WDSU
New York, N. Y.—WRCA
North Platte, Neb.—KODY

Odessa, Tex.—KRIG
Oil City, Pa.—WKRZ
Omaha, Neb.—KFAB
Orange, Va.—WJMA
Orlando, Fla.—WKIS

Paducah, Ky.—WDXR
Pecos, Tex.—KIUN
Pensacola, Fla.—WCOA
Peoria, Ill.—WEEK
Petoskey, Mich.—WMBN
Philadelphia, Pa.—WRCV
Phoenix, Ariz.—KTAR
Pittsburg, Kans.—KOAM
Pittsburgh, Pa.—WAMP
Pocatello, Idaho—KSEI
Portland, Me.—WCSH
Portland, Ore.—KGW
Prescott, Ariz.—KYCA
Providence, R. I.—WJAR
Raleigh, N. C.—WPTF
Reading, Pa.—WRAW
Reno, Nev.—KOH
Richmond, Va.—WRVA
Roanoke, Va.—WSLS
Rochester, Minn.—KROC
Rochester, N.Y.—WVET
Roswell, N.M.—KSWS
Sacramento, Calif.—KCRA
Saginaw-Bay City, Mich.—WSAM

St. Cloud, Minn.—KFAM
St. Louis, Mo.—KSD
St. Paul, Minn.—KSTP
Salem, Ore.—KBZY
Salt Lake City, Utah—KCPX
San Antonio, Tex.—WOAI
San Diego, Calif.—KFSD
San Francisco, Calif.—KNBC
Santa Barbara, Calif.—KTMS
Savannah, Ga.—WSAV
Schenectady-Albany-Troy, N.Y.—WGY
Scranton, Pa.—WSCR
Seattle, Wash.—KING
Selma, Ala.—WHBB
Shreveport, La.—KENT
Sioux Falls, S.D.—KELO
Spartanburg, S.C.—WORD
Spokane, Wash.—KHQ
Springfield, Ill.—WMAY
Springfield, Mo.—KGBX
Syracuse, N.Y.—WSYR

Tampa, Fla.—WFLA
Toledo, Ohio—WSPD
Traverse City, Mich.—WTCM
Tucson, Ariz.—KTAN
Tulsa, Okla.—KVOO
Twin Falls, Idaho—KTFI

Virginia, Minn.—WHLB
Washington, D.C.—WRC
Wausau, Wis.—WSAU
Weirton, W. Va.—WEIR
Weslaco, Tex.—KRGV
West Palm Beach, Fla.—WEAT
Wilkes-Barre, Pa.—WBRE
Williamsport, Pa.—WRAK
Wilmington, Del.—WDEL
Winston-Salem, N.C.—WSJS
Worcester, Mass.—WAAB

Yakima, Wash.—KIMA
York, Pa.—WORK
Youngstown, Ohio—WFMJ
Yuma, Ariz.—KYUM

Zanesville, Ohio—WHIZ

Honeywell

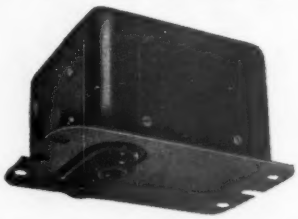
First in Control

75th YEAR — PIONEERING THE FUTURE — SINCE 1885

fueloil & oilheat

DONGAN
Oil Burner
Transformers

. . . . . Custom Built to your Specifications



Dongan Ignition Transformers are standard equipment on leading makes of oil burners. They are fully guaranteed. Available in many sizes—both domestic and industrial. Approved by U. L. and C. S. A. They offer you these outstanding features: High voltage windings (5,000 to 20,000 volts); cool centers; no radio or TV interference; custom design. Just send us a blueprint of the type of mounting you need!

Get this New Portable Transformer Tester!

You'll like the convenience of Dongan's new test unit. It includes a high voltage potential transformer; a voltmeter; a pair of high tension test leads for connecting to secondary terminals of the transformer you're testing; and a pair of primary leads to connect the transformer to current supply. For bench or field work, this versatile tester is easily portable — weighs just 15 pounds. *Write for prices.*

SEND FOR YOUR FREE TRANSFORMER CATALOG TODAY

The Dongan Line Since 1909

DONGAN ELECTRIC MANUFACTURING CO.

2981 Franklin St., Detroit 7, Mich.

Names in the News

William F. Klockau, former president, Nu-Way Corp., Rock Island, Ill., died July 9. He was born in 1893 in Rock Island and was associated with Nu-Way for 34 years being a stockholder and serving as president for many years until his retirement in 1958. In 1952, he was elected to the board of directors of the Oil-Heat Institute of America. Among his survivors are his wife and a son, William Klockau, Jr.

Lee Epley has been named advertising manager, Airtemp Division, Chrysler Corp., Dayton, Ohio. Epley, who begins his 19th year at Chrysler this month, replaces *Arthur L. Foster*, who resigned to join an advertising agency in Bloomington, Ill. Epley has been sales promotion manager at Chrysler Airtemp since December, 1959. *Carl T. Miller* becomes sales promotion manager and replacing him as supervisor of advertising production is *John F. Zaino*.

Epley

W. B. Kerr has been appointed manager, Midwest Division, Ralph N. Brodie Co., San Leandro, Calif. Kerr succeeds A. J. Weckler, former manager of the company's Midwest Division office located at Forest Park (Chicago), who has resigned. Kerr joined the company more than five years ago as a field engineer, and later was promoted to assistant division manager.

H. L. McNally, H. L. McNally & Son, Manufacturers' Sales Representative, Des Moines, Iowa, passed away June 15 from a heart ailment. McNally was born in Cedar Rapids, Iowa, in 1898. During his association with the industry he spent 16 years with the Micro Westco Company, manufacturers of oil burners and turbine pumps. For the past 14 years he has been a manufacturers' representative.

Daniel P. Carlin has been appointed eastern sales manager, Heater and Tank Division, John Wood Co., Conshohocken, Pa. The Heater and Tank Division manufactures a full line of water heaters and heating equipment. Carlin started with the company's tank sales in 1924. He later succeeded to the position of manager of the utility division in Conshohocken. In 1947, he was appointed manager of the company's New York District located in Richmond Hill, Long Island. Until his present appointment, he served as manager of mid-Atlantic district sales.

E. C. Griffin has been appointed district manager, Electric Furnace-Man, Inc., Emmaus, Pa., covering the western New York state area. Griffin is well known in the heating field and will work with dealers in the promotion and sales of domestic, commercial and industrial automatic heating equipment.

M. W. Burleson has been appointed a general sales manager, Industrial Insulations Division, Johns-Manville, N. Y. He succeeds *J. B. Jobe*, who has become general manager of one of three J-M operating divisions. Burleson's new responsibilities involve the sales and distribution of J-M insulations products to company distributors through sales offices at Boston, Chicago, Cleveland, Houston, Los Angeles, New York, Philadelphia, San Francisco and St. Louis.

Q—What makes a successful heating oil distributor?

A—With ambition, guts, and some luck, a guy can make a go of any business, and that includes heating oil.

What kind of assistance should a distributor expect from his supplier?

Plenty. Remember, he is the customer in this deal.

A supplier can assure consistent product quality, load after load. Convenient loading points don't hurt either.

Strong selling programs can help you put the finger on new business opportunities, fast.

Sound answers to questions and problems. A distributor's got plenty of both. A good supplier keeps in touch to provide on-the-spot answers. He can draw from the experience of many distributors in helping you.

National and local advertising that works *hard* to build confidence in your name and your product.

Then there are those extra services that make such a big difference. Setting up degree-day systems, improving delivery patterns, solving modern credit problems, training your employees and the like.

Are you serious?

Very.

Call or write the nearest Regional Office listed: Philadelphia, Pa. Pittsburgh, Pa. • Providence, R. I. Syracuse, N. Y. • Charlotte, N. C.

THE ATLANTIC REFINING COMPANY

Crane hydronic systems add

Proof of Quality

to whatever you have to heat—and add nothing to your costs

FOR TYPICAL RESIDENTIAL INSTALLATION

CRANE SUNNYDAY 5 Steam or water boiler in six sizes from 70,500 to 219,100 Btu/hr net IBR rating. Model PA water boiler, illustrated, comes complete with factory wiring, all accessories, ready for fast installation. Tankless heater capacities are 3.25 to 5.50 gals./min.

CRANE SUNNYDAY 15 Water boiler in four sizes from 66,800 to 156,000 Btu/hr net IBR rating. Model PTA, shown above, comes factory assembled and wired and includes tankless heater.

WITH COMPLETE CHOICE OF CRANE SUNNYBASE RADIATION

CRANE SUNNYBASE "C"—cast-iron baseboard for long service, low maintenance.

CRANE SUNNYBASE "L" and "H"—new nonferrous panels in three capacities. Four-piece design assures easy installation—with snap-on accessories.

CRANE SUNNYRAY—for bathrooms and kitchens—anywhere there's limited outside wall space. Recessed or free-standing models.

You're seeing and hearing more of one word these days. *Quality.* Home buyers and banks ... the FHA ... builders ... practically everyone concerned with construction ... talk quality.

You must provide quality—and prove it to profit and grow. That's why Crane hydronic heating systems are more important to you today than ever before. The name Crane—one of the best known and most respected in heating—means quality to buyers, builders and banks. To those who know heating, hydronics is *the* quality heating method. Combine the two—and you buttress your bid with *proof of quality* at no extra cost.

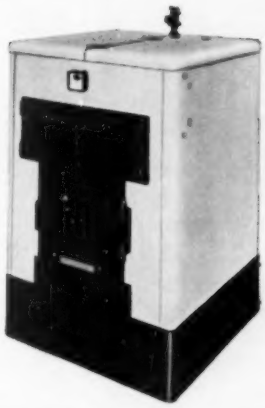
There's a Crane hydronic system for every application you have. For a quick review of the line, check these pages. For an impressive demonstration of the line's quality features—and dramatic price information—see your Crane Wholesaler or Representative.

CRANE®

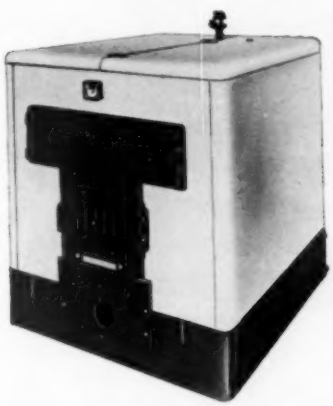
proof of quality at no extra cost

PLUMBING-HEATING-AIR CONDITIONING GROUP
P. O. BOX 780, JOHNSTOWN, PENNA.

VALVES • ELECTRONIC CONTROLS • PIPING
PLUMBING • HEATING • AIR CONDITIONING



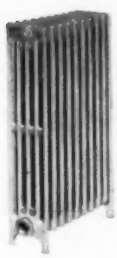
SUNNYDAY 31—compact, high-output steam or water boiler in nine sizes from 232,600 to 636,200 Btu/hr net IBR rating.



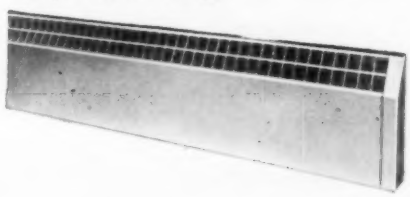
SUNNYDAY 41—for larger commercial installations. In ten sizes from 622,700 to 1,537,300 Btu/hr net IBR rating.

FOR COMMERCIAL USE

NEW CRANE RADIATION



COMPACT TYPE "N" THIN-TUBE—of proven, rugged design and construction. Comfortable and fast heating. Free standing for easy, quick installation. Available with or without legs.



SUNNYWALL TYPE N FINPIPE RADIATION—solves commercial, institutional and industrial heat problems where minimum space is available.

NEW
SCIENTIFIC DEVELOPMENT
AEROSOL
LIQUID BURNISHER
CONTACT CLEANER

with one push of the button . . .
CLEANS AND RESTORES ELECTRICAL CONTACTS ON ELECTRONIC EQUIPMENT
Such as: Relays, Breakers, Solenoids, Thermostats, etc.

- Permits application in difficult areas.
- Effective on High and Low Voltage.
- Eliminates possibility of scratching or damaging controls.
- Dries in seconds . . . leaves no residue.
- Prevents rust, pitting and corrosion.
- Non Conductive — Non Staining — Non Toxic — Non Inflammable.
- Economical — Approximately 300 Applications.
- Preferred by Electronic Manufacturers.

AVAILABLE AT MOST JOBBERS OR WRITE FOR NEAREST DISTRIBUTOR.

$1.25 can

THE TANKIT CO., INC.
560 BELMONT AVENUE
NEWARK, NEW JERSEY

Peter L. Quattrochi has been named general sales manager, Taco Heaters, Inc., Cranston, R. I. Quattrochi will be responsible for total national sales activities including Customer Service, National Accounts, Original Equipment Manufacturers, Advertising Sales Promotion and Sales Offices. He was formerly Taco's manager of Field Sales and Services and previous to that had been Customer Services Manager.

James W. McGuire has been appointed exclusive sales agent for the Statronic Systems by CRS Industries, Inc., Philadelphia, Pa., for the metropolitan New York area, central N. Y. state, Conn. and R. I. The Statronic System is a method of controlling dust and dirt electronically.

James A. Ahearn, executive vice president and director, Sinclair Refining Co., N. Y., died recently after a brief illness. He was 58 years old. He joined Sinclair Refining in 1924 and after serving the company continuously was elected executive vice president and chairman of the Executive Committee in 1958.

Wilfred H. Hall has been appointed manager of Dealer Relations, Wyatt, Inc., New Haven, Conn. Hall started his petroleum career prior to World War II in a retail light oil business in Salem, Mass. He served as assistant to the vice president, Pocahontas Fuel Co., and, more recently, was executive secretary of the Independent Oil Men's Association of New England. Hall also served on the Fuels Advisory Panel of the New England Council, the National Oil Jobber's Fuel Oil Committee and is active in the American Petroleum Institute.

R. F. Kelly has been named manager of distribution, York Division, Borg-Warner Corp., York, Pa. He succeeds *W. E. Landmesser* whose appointment as general sales manager for packaged products had been previously announced.

Other company appointments include: *P. F. Wittemore*, northeast regional sales manager; *John C. Rose*, heading a new district sales office for residential and commercial products in Atlanta; *J. R. Pollock*, regional sales manager, central region; *Paul W. Brown*, district sales manager, southeast region; and *Ledyard Avery*, product manager, engineered machinery division.

Cliff Neynaber has been promoted from operations manager to Detroit metropolitan sales representative, Amco Corp., Detroit Division. Neynaber has had experience in all departments of Amco and enters the sales field with a complete knowledge of Amco products and services. Amco is a distributor of liquid handling equipment for the petroleum and general industrial markets.

Joseph T. Schaab has been appointed district manager, Seattle, Washington Sales Offices, The Heil Co., Milwaukee, Wisc. Also appointed was *Frederick A. Brubaker*. Brubaker will be district manager of the Kansas City, Mo., sales office.

G. William Schreck has been appointed sales manager of The Leland Ohio Electric Company, Dayton, Ohio, a wholly owned subsidiary of Howell Electric Motors Company. He has been associated with Leland since 1950 and has served as Cleveland regional manager since 1954.

Wesley R. Becher, chairman of the board of Radiant Baseboard Panels, Inc., Newington, Conn. died in Hartford recently. Becher founded the company in 1949 and served as president until 1959 at which time he assumed the chairmanship.

William P. Klein has been named sales manager, wholesaler sales, A. W. Cash Valve Mfg. Co., Decatur, Ill. He joined the company in 1959 as advertising and sales promotion manager.

Can Motorola 2-way radio cut my bills?

If you operate vehicles, you bet it can! Here's how: Drivers radio-in from their vehicles and are dispatched directly from job to job. The result: less backtracking, less "deadheading"—you get more for your money from men *and* vehicles—and you cut phone bills, gas and oil bills and maintenance bills.

But am I big enough for 2-way radio? Yes . . . even if you operate only one or two vehicles, 2-way radio saves money, mileage, time—gives you *more calls per day* —and much better service for your customers.

Can I afford it? If your drivers phone in just a few times a day, *your radio will pay for itself*. You can own or lease Motorola 2-way radio for less than $1.00 per day per vehicle. That charge covers everything—equipment, installation and maintenance.

Can you prove it? We'll be *glad* to! Call in your local Motorola representative (see Yellow Pages under "Radio Communications"). He will show you the dollars and cents proof of how Motorola can build profits for *your* business. He will give you a *demonstration of a nearby system in action*. Let him show you *why* Motorola equipment is more advanced, more reliable, more economical. Ask him about service and factory responsibility for your system. You'll see why, with the most experienced buyers—police, fire, railroads, utilities, etc., *Motorola outsells all other makes combined!*

GET THE FACTS . . . MAIL THIS COUPON TODAY!

Motorola Communications & Electronics, Inc.
A Subsidiary of Motorola Inc., 4501 Augusta Blvd., Chicago 51, Ill.

☐ MAIL ME FULL FACT KIT ON 2-WAY RADIO
☐ HAVE REPRESENTATIVE TELEPHONE FOR APPOINTMENT

NAME_____ TITLE_____
COMPANY_____ No. VEHICLES ☐
ADDRESS_____ PHONE_____
CITY_____ ZONE____ STATE_____

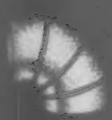
WILLIAMSON

HEATING AND COOLING

....works "Magic" for your sales!

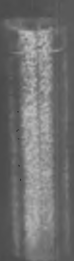
*Seal-Tite** DUCT, PIPE & FITTINGS

K. D. Rectangular Duct



Adjustable Elbow

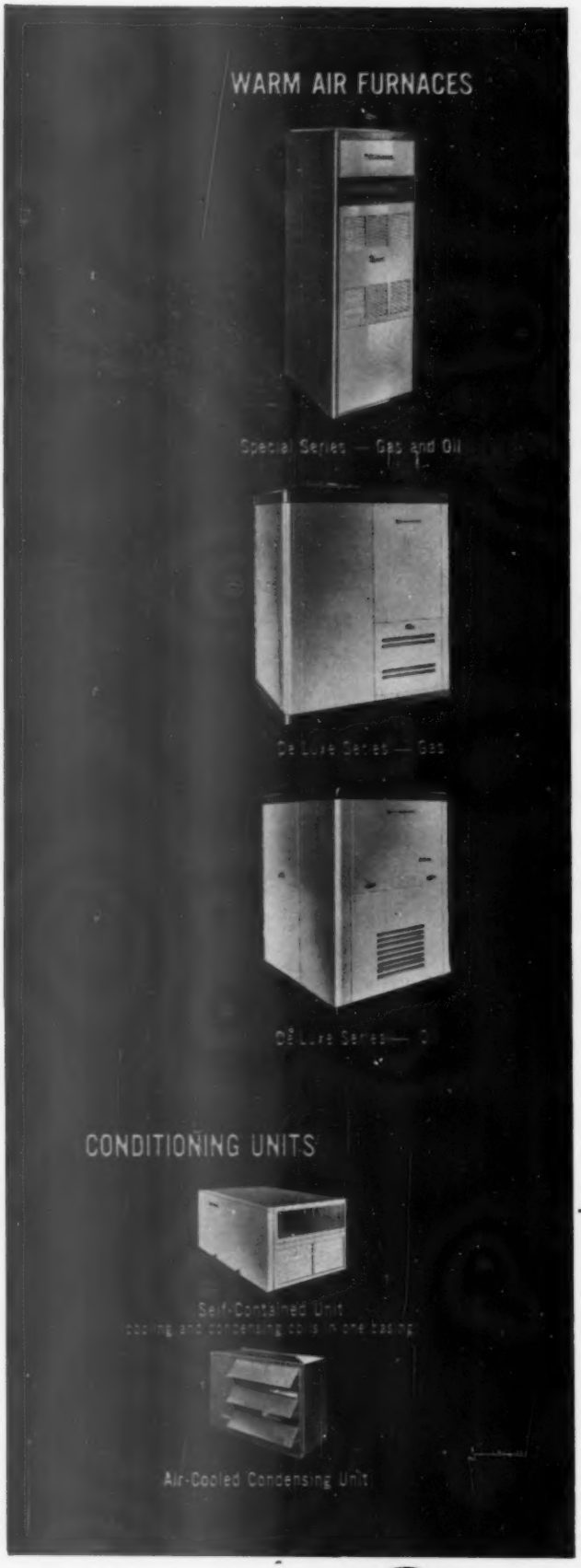
Top Take-Off



Snap-Lock Round Pipe

AIR

Space Console Unit



THE INDUSTRY'S MOST COMPLETE LINE and THE INDUSTRY'S MOST UNIQUE SYMBOL

will help you make more heating and cooling sales

WARM AIR FURNACES . . . to fit any price range for the home owner or the builder.

AIR CONDITIONING UNITS . . . to fit practically any residential or light commercial need.

*Seal-Tite** **DUCT, PIPE AND FITTINGS** . . . to assure complete "magic comfort" with "Magic Brain" equipment!

NATIONALLY ADVERTISED to home owners and builders. Complete assortment of free literature, brochures, sales aids and tested selling plans.

HEATS AND COOLS AMERICA'S HOMES

Copyright 1959, The Williamson Co. * T.M. Pat. Pend.

THE WILLIAMSON COMPANY
3312-R-8 Madison Road • Cincinnati 9, Ohio

Gentlemen:
Rush me information on your "MAGIC BRAIN" line of:
____Heating Equipment ____Cooling Equipment
____"Seal-Tite" Duct, Pipe & Fittings

Name_____Title_____

Firm_____

Address_____

City_____Zone____State_____

A PROGRESS REPORT FROM PACO INDUSTRIES.....

NEW ENGLEWOOD, N. J. PLANT LOCATION OFFERS EXPANSIVE FACILITIES FOR REBUILDING OF AUTOMATIC HEATING EQUIPMENT

A phenomenal growth in just a decade . . . realization of limitations of present plant location . . . Paco Industries has taken progressive steps to insure the continuance of the high degree of service and customer satisfaction well-earned in its life span.

The wide recognition as authorized rebuilders of Automatic Heating Equipment . . . was not secured by chance . . . but, gained thru use of skilled technicians, precise testing facilities and quality control. Good reasons why Paco is considered the "Foremost Rebuilders of Equipment for the Heating Industry".

AUTHORIZED
REBUILDERS OF
CONTROLS
FUEL UNITS
WATER FEEDERS
CIRCULATORS
TRANSFORMERS
GAS VALVES, ETC.

FREE CATALOG . . . available thru your wholesaler. 36 pages, listing approximately 12,000 units.

The New plant headquarters will provide greatly expanded, ultra-modern facilities and equipment designed to give the finest service possible. A continual stock complement of approximately 25,000 units is planned, thus, immediate nationwide delivery is guaranteed. The Englewood, N. J. plant is strategically located . . . readily accessible to 4 major air terminals, 4 railways, unlimited trucking lines, major highways and a centrally located Post Office.

We would like to extend a cordial invitation to see our new plant and equipment . . . and, of course, to take advantage of the even finer service that these facilities will make possible.

Due to this extensive expansion, distributorships are available in certain choice territories. Write today for detailed information.

Paco INDUSTRIES INC. 465 SOUTH DEAN STREET • ENGLEWOOD, NEW JERSEY

"We Average Better Than 200 Gallons Per Customer Delivery–With No Run Outs!"

Heling Bros. Ups Per Delivery Gallonage 22% Using Singer Fuel Use Computer

"We've found the Singer Fuel Use Computer takes the guess-work out of scheduling deliveries" says Walter C. Heling, president of Heling Bros. Fuel, Inc., Lindenhurst, N. Y. "We have proven to even our most skeptical customers that the computer enables us to estimate their oil reserves almost exactly at all times."

Once having gained customer confidence, Heling Brothers was able to school nearly all of them to scheduled area delivery. Result: Customer peace of mind in the knowledge that automatic service will keep their oil reserves up. Customers no longer need to check oil reserve levels.

"We recorded an increase of 22% per delivery gallonage over a comparable period of time for preceding year," says Heling. "With automatic delivery we cover as many miles and serve the same number of customers better—with one less truck. This all adds up to three fewer stops per customer for the heating season."

"The Singer Fuel Use Computer creates savings in manpower; enables us to route our trucks more advantageously; and has increased the average drop to 200 plus gallons per delivery" says Heling Brother's dispatcher Bernard Wolf.

2828

Find out how the Singer Fuel Use Computer can help you make maximum profits in your business.

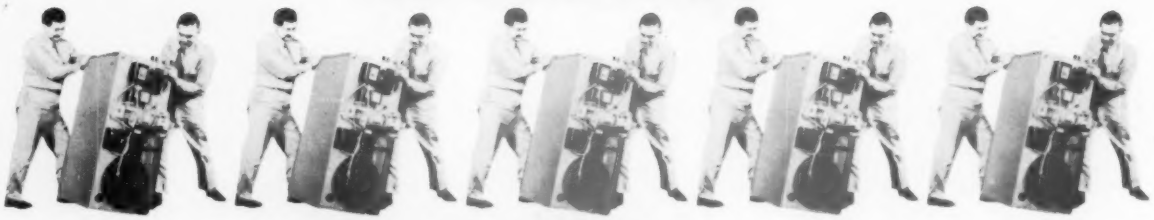
HRB

HRB-SINGER, INC.

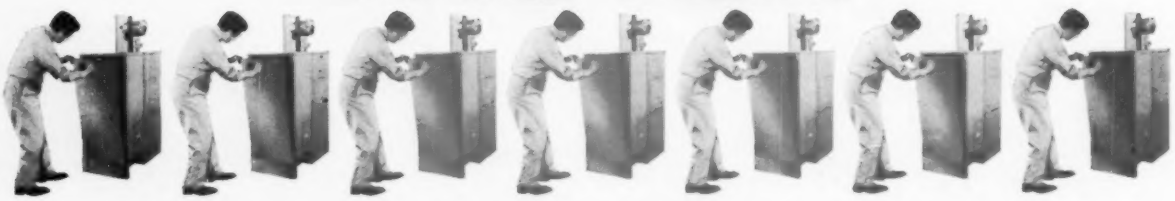
A SUBSIDIARY OF THE SINGER MANUFACTURING COMPANY

90 Schureman Street, New Brunswick, N. J.

GET MORE JOBS



FINISH THEM FASTER



WITH THE ARCOLEADER PACKAGED BOILER

Be more competitive on your hydronic* bids for new construction and make a good profit, too. How? Use the American-Standard 6-point estimating and installation plan, and the American-Standard packaged Arcoleader cast iron oil-fired boiler with Heatrim baseboard panels—both for fast, low-cost installation.

Money-making 6-point plan includes: an accurate, easy-to-figure heat loss calculation; accurate sizing of boiler, baseboard, pumps and piping; a preplanned labor procedure and I-B-R test-rated equipment.

Packaged Arcoleader I-B-R rated boiler is shipped factory-assembled with circulator and controls mounted and wired. All Arcoleader boilers are equipped with the new Model DH Arcoflame Oil Burner featuring the Exact-aire adjustment control that sets air-oil mixture without tools. Tankless water heater and de luxe jacket optional. Net I-B-R ratings: 75,000 to 183,000 Btu/hr.

Heatrim panels are low-cost, yet maintain quality and styling. Four combinations of enclosure and element give economical, efficient heat for all homes. Panels go in fast. White satin prime coat on 8″ model saves painting cost.

For information on the 6-point plan or the complete line of hydronic products, see your American-Standard distributor or write: AMERICAN-STANDARD, PLUMBING AND HEATING DIVISION, 40 W. 40th Street, New York 18, New York.

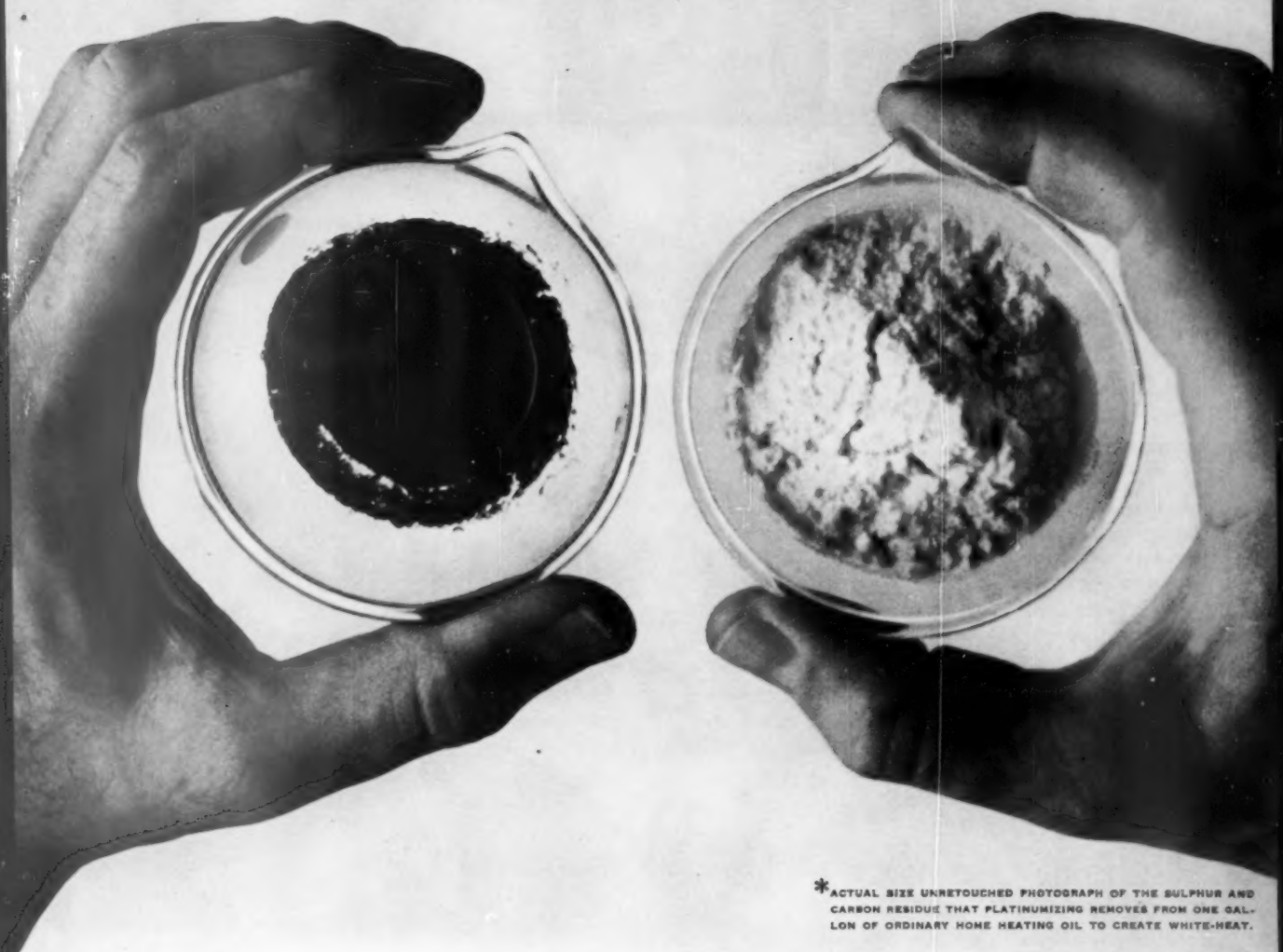
American-Standard and Standard* are trademarks of American Radiator & Standard Sanitary Corporation

Hydronics—the science of heating or cooling with water

AMERICAN-Standard
PLUMBING AND HEATING DIVISION

HESS

PLATINUMIZES THE TROUBLE* OUT OF HOME HEATING OIL



*ACTUAL SIZE UNRETOUCHED PHOTOGRAPH OF THE SULPHUR AND CARBON RESIDUE THAT PLATINUMIZING REMOVES FROM ONE GALLON OF ORDINARY HOME HEATING OIL TO CREATE WHITE-HEAT.

You can count on fewer service calls . . . the profit-breaking part of your business . . . when you deliver Hess PLATINUMIZED WHITE-HEAT. Because every last drop of WHITE-HEAT is processed one step further . . . every gallon of WHITE-HEAT delivered to you is free of trouble-causing, heat-retarding sulphur and carbon residues that build up service calls. This is Platinumizing . . . the vital extra step in refining that Hess takes to give you—and your customers—the cleanest, most trouble-free home heating oil obtainable. This is PLATINUMIZED WHITE-HEAT . . . the home heating oil that's premium in every way but price!

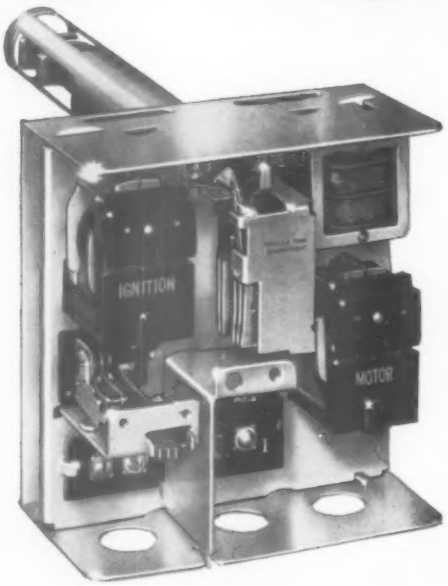
PLATINUMIZED WHITE-HEAT—THE BRAND TO BUILD YOUR NAME ON!

Hess, Inc. State St., Perth Amboy, N. J. • phone VAlley 6-1000

TERMINALS: PERTH AMBOY, N. J.* • WOODBRIDGE, N. J.* • EDGEWATER, N. J. • PORT READING, N. J.* • PENNSAUKEN, N. J.* • NEW HAVEN, CONN. • ALSEN, N. Y. • RENSSELAER, N. Y.* • ROCHESTER, N. Y. • SCRANTON, PA.* • BALTIMORE, MD.* • HESS FUEL OILS, INC.: JACKSONVILLE, FLA. • PORT EVERGLADES, FLA. • HESS TERMINAL CORP.: HOUSTON, TEX. • NEW ORLEANS, LA.

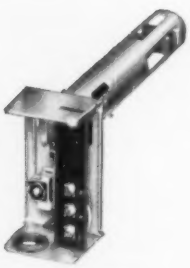
*WHITE-HEAT Terminals

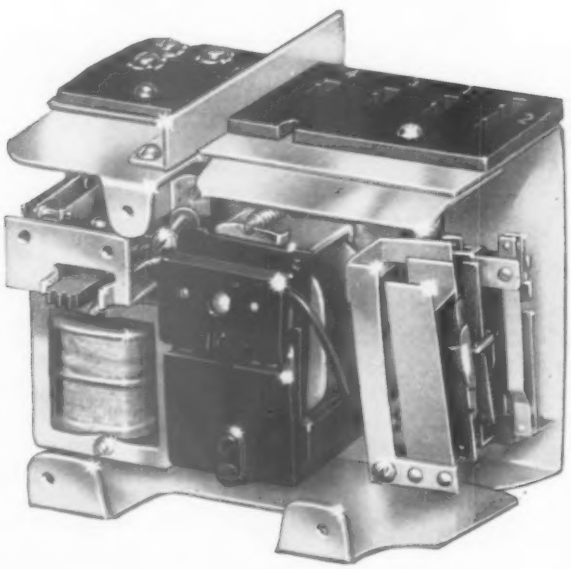
CHO



New Honeywell RA816 and RA817 Protectorelays*

Stack-mounted oil burner primary controls for constant or intermittent ignition. Both models are equipped with low temperature coil and transformer to reduce operating temperature within the case. New RA816 has a magnetic pyrostat for faster response.





New two-piece Oil Burner Control Series

Dependable RA816—RA817 components are separated for convenient mounting. *R868 Relay* provides constant ignition. *R869 Relay* provides intermittent ignition. Available with line-voltage lead wires or screw-type terminals. Burner relays are designed for burner, furnace or boiler manufacturers who have their own UL listings and provide their own covers. Two other models, R866-67 are similar except that they come complete with J Box and cover. *The C550* pyrostat mounts separately for convenient pre-wired package furnaces and boilers.

ICE

CHOICE of a Honeywell stack relay or a Honeywell two-piece relay with stack detector for your next job.

Honeywell's one and two-piece oil relay systems both recycle on flame failure to prevent nuisance shut-downs. Both have proven, reliable relays with *press-back* and *wipe* for more dependable service and longer life. Open-style safety switch is easy to check and observe. Yet these are but a few of the benefits you gain by installing Honeywell control systems. For when you deal with Honeywell, you're backed by Honeywell. Backed 100% by the best service in the industry and a complete line of quality products. You get reliability—easier installation—simplified inventories—training school for your crew—*plus* really fast help when you need it. The kind of help that's instantly available from 112 sales and service offices as near to you as your telephone.

*Trademark

For information on Honeywell's complete line of control systems for heating and cooling, call your local Honeywell office, or write: Honeywell, Dept. FH-8-138, Minneapolis 8, Minnesota. In Canada, write Honeywell Controls Limited, Toronto 17, Ontario.

Honeywell

H HONEYWELL First in Control SINCE 1885

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fuel oil & oil heat

METALBESTOS CHIMNEYS...

4 PACKAGES GIVE YOU 62 STYLE COMBINATIONS

THE MONTEREY. Attractive in red or buff brick. You select any one of four top styles – Utility Rain Cover (shown). Weather Crown, Top Extension Stub, or plain. Available in three, four and five foot heights.		24 COMBINATIONS
THE MONTEREY TWIN. Big brother of the Monterey – a massive 32" by 18". Accommodates an individual stack or any combination of two stacks. Comes in red brick or buff* brick with your choice of four top designs – Twin Weather Crown (shown), Twin Utility Rain Cover, Top Extension Stubs, and plain. Available in three, four and five foot heights. *Buff color – special order.		24 COMBINATIONS
THE SUBURBAN. Handsome and economical in durable galvanized steel. Pick any one of four top styles – Top Extension Stub (shown), Weather Crown, Utility Rain Cover, or plain. Three, four and five foot heights.		12 COMBINATIONS
THE CONTEMPORARY. Modern round design for contemporary construction. Also ideal for remodeling, farm buildings, industrial applications, etc. Round Top (shown) fabricated from durable aluminized steel, attaches directly to pipe. Chimney Cap is also available where open stack is desired.		2 COMBINATIONS

62 COMBINATIONS

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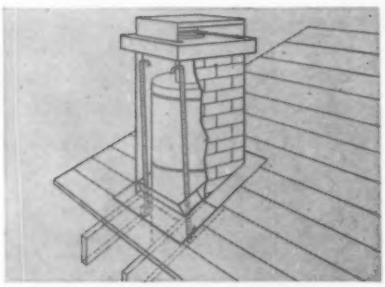
WILLIAM WALLACE COMPANY
BELMONT, CALIFORNIA

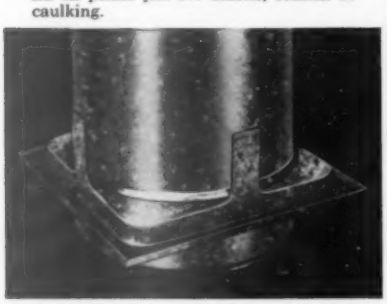
MANUFACTURING PLANTS IN BELMONT, CALIFORNIA • LOGAN, OHIO

ONE MAN,
ONE STOP,
ONE HOUR



Exclusive: New housings secure to roof framing with metal tension straps. Quick assembly – no metal screws required. Wind tunnel tested. Metalbestos Housings won't shift, buckle or twist in 100-mile-an-hour winds.

Exclusive: Twist-Lock. Light-weight Chimney Pipe sections fit together quickly with same action you'd use to twist lid on pickle jar. No mastic, cement or caulking.



Exclusive: New, Fast, Support Installation. Frame standard 16" on center opening – nail in support plate and insert starter section. U. L. listed.

METALBESTOS

Standard of Indiana to reorganize; American Oil to be marketing Outlet

STANDARD OIL Company (Indiana) on July 7 announced plans for an extensive corporate reorganization, effective January 1, 1961, subject to Internal Revenue Service clearance and to stockholders approval.

Chairman Frank O. Prior and President John E. Swearingen told stockholders in a letter that "the purpose of the plans . . . is the increased profitability of your company."

They said the reorganization will:

1. Make Standard Oil (Indiana) exclusively a parent company concerned with board management policy and with the coordination of subsidiaries that deal with all aspects of the oil business. The parent company will have no direct operating assets such as it now has in the Midwest.

2. Combine all product refining, transportation, and marketing operations and assets of Standard and its wholly owned subsidiaries, Utah Oil Refining Company and The American Oil Company, in a single company with unified management and generally with common trade marks and brands. This company will be The American Oil Company. L. W. Moore, now president of American Oil, will continue as president and chief executive officer.

"Since all assets involved are wholly owned, the value of each stockholder's equity as represented by his shares of Standard Oil stock will remain unaffected by the change," Prior and Swearingen explained.

"The new operating organization will use the American Oil name and related brands and trade marks," they said. "We will continue to use and protect the Standard name by marketing in the Midwest through a Standard Oil division of The American Oil Company."

The proposed reorganization will be submitted to stockholders at a special meeting to be held probably in late September.

Present directors of the parent company, Standard Oil Company (Indiana), who will continue as members of Standard's board are Swearingen, Dwight F. Benton, S. A. Montgomery, David Graham, Robert C. Gunness, Jacob Blaustein, Homer J. Livingston, George V. Myers, Lawrence A. Kimpton, J. Howell Turner, and Merwin Bristol.

Key executives of Standard Oil Company (Indiana), as planned for reorganization January 1, were announced by Prior and Swearingen.

As previously announced, Swearingen will continue as president and and also become chief executive officer August 25, when Prior retires and the office of chairman is discontinued.

Robert C. Gunness will continue as an executive vice-president and will coordinate activities of three affiliates, American Oil Company, Amoco Chemicals Corporation, and Tuloma Gas Products Company.

George V. Myers will continue as an executive vice-president and will coordinate activities of four affiliated companies, Pan American Petroleum Corporation, Service Pipe Line Company, Indiana Oil Purchasing Company, and Amoco Trading Corp.

S. A. Montgomery, now vice-president of manufacturing for Standard Oil, will continue as a vice-president, reporting to Mr. Gunness, and will coordinate manufacturing, research, and purchasing functions.

Dwight F. Benton, now vice-president of sales for Standard Oil, will continue as a vice-president, reporting to Mr. Gunness, and will coordinate marketing, supply, and distribution functions.

David Graham will continue as financial vice president.

J. Howell Turner will continue as general manager of employee and public relations.

Merwin Bristol will continue as general counsel.

Earl W. Russell will continue as corporate secretary.

The office of chairman of the board will be discontinued on the retirement August 25 of Frank O. Prior.

F. Cushing Smith, J. C. Ducommum, and William H. Miller will re-

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for high pressure deliveries

Dash-pot feature assures better control under extreme pressures—less shock after delivery

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Vacuum breaker feature available

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All parts are completely interchangeable with parts of other "210" nozzles on the market

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sign as directors of Standard and will become directors of American. American's board also will include Moore, Herman L. Boyle ,Richard J. Farrell, John E. Kasch, Winston S. Peeler, and Philip C. White.

American Oil Officers

The officers of American Oil will include: president and chief executive officer—Moore, now president of American Oil, executive vice president—Mr. Smith, now parent company director and general manager of manufacturing; and vice president—Miller, now parent company director and general manager of sales.

Moore, Dr. Kasch, and Peeler are now on American's board. Boyle, Farrell, and Dr. White are Standard Oil executives. For American, Dr. Kasch will be general manager of supply and transportation; Peeler, general manager of employee and public relations; Boyle, general manager of administration; Farrell, general counsel; and Dr. White, general manager of research and development.

Headquarters of both companies will be in Chicago. Standard Oil is now headquartered in Chicago, American Oil in New York City, and Utah Oil Refining in Salt Lake City.

Standard Oil (Indiana) is a refiner, transporter and marketer of petroleum products in 15 middle western states; American Oil, in 28 eastern, southern, southwestern, and western states, and Utah Oil Refining, in 5 northwestern states. Altogether they have 13 sales regions and 12 refineries.

The reorganization generally will not affect other affiliated companies' operations concerning crude oil and natural gas exploration and production and purchasing in this country and abroad; domestic crude oil pipeline transportation; manufacturing and sales of petrochemicals and liquefied petroleum gas, and with foreign refining and marketing. These activities are carried on by Pan American Petroleum Corporation, Pan American International Oil Corporation, Indiana Oil Purchasing Company, Service Pipe Line Company, Amoco Chemicals Corporation, Tuloma Gas Products Company and Amoco Trading Corporation.

Milwaukee Journal studies how area Homes are heated

IN A STUDY, 1960 Consumer Analysis Findings, the *Milwaukee Journal* includes estimates for the heating fuel used in Milwaukee homes. The estimates show:

	Oil	*Gas*	*Coal*
1960	135,259	143,295	56,246
1959	135,358	127,145	65,708
1958	137,206	113,260	73,134
1957	139,111	90,642	84,977
1956	128,888	80,136	95,676

In a separate tabulation, "Basic Data for the Milwaukee Market Areas," compiled by the *Journal*'s Business Research Division, estimates showed these home fuel heating preferences in the indicated areas, as of January 1, 1959:

	Oil	*Gas*	*Coal*
Greater Milwaukee	135,358	127,145	65,708
Standard Metro. Area	142,400	134,000	68,220
Total Retail Trading Zn.	229,000	191,000	107,500

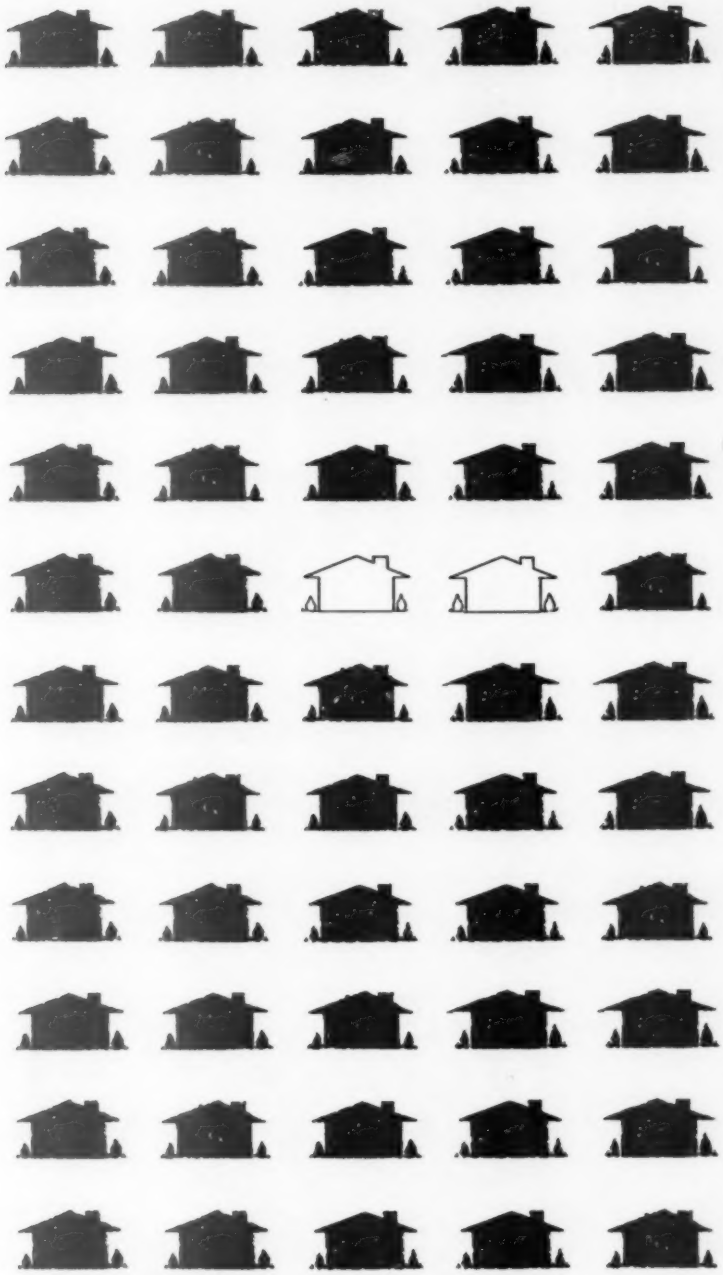
The tabulation shows that while oilheating accounts for 41% of all home heating in the Greater Milwaukee area, its share of the market increases to 43% of the total retail trading zone.

Oil-Heat Institute checks oil storage tank Failures

A CHECK on the life of fueloil storage tanks was recently completed by the Distribution Division and Market Research Department of the Oil-Heat Institute of America. Questionnaires were sent to thousands of oilheating dealers and reports covered more than a half million tanks.

Charles H. Burkhardt, managing director of OHI and national secretary of the Distribution Division, reported that the study included 497,000 tanks with side openings and 122,000 tanks with bottom openings.

The survey indicated that the failure rate among tanks with side openings was 1.17% against 0.7% for tanks with bottom openings. However, the average age of the tanks with side openings was ten years and the ones with bottom openings was five years. Therefore, the evidence points towards age of tank as a more important factor in rate of failure.



You can replace 98% of the oil burner filters in your territory with just four PUROLATOR elements

With a small inventory of just *four* Purolator filter elements, you're set to handle the replacement needs of 98% of the oil burner filters on the market—old ones, new ones, and most of the odd sizes.

Once you've installed a Purolator you're set for a long time. Purolator elements filter finer (down to 0.0005") and longer (they last a year or more without servicing) than any other filter element on the market. With Purolator, you'll be spared the usual emergency calls to replace nozzles that have failed because of abrasive dirt. And a year or more from now, at replacement time, you'll appreciate the way the Purolator element pops out on a spring to make replacement neat and easy.

Purolator has a cross-reference chart that shows you which Purolator elements will fit which brands of oil burner filters. You can get a free copy of the chart by filling in the coupon and sending it to Purolator Products, Inc., Rahway, New Jersey.

Purolator Products, Inc., Dept. 2578
Rahway, New Jersey

Please send me the Purolator Cross Reference Chart showing the correct Purolator filter element for eight major brands of oil burner filters.

*Name*_____

*Company*_____

*Address*_____

*State*_____ *City*_____ *Zone*_____

Filtration For Every Known Fluid

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PRODUCTS, INC.
RAHWAY, NEW JERSEY AND TORONTO, ONTARIO, CANADA

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RAPID-TITE
Fuel Oil Delivery System

PHILLY *RAPID-TITE* DIVISION
PLASTIC AND APPLIANCE CO., INC.
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SHOW ME!

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Author replies to Comments made about suction-line Sizes

IN THE APRIL ISSUE appeared an article, "How to end loss-of-prime Trouble," which described in considerable detail the reasons why this service problem developed and how it could be cured.

Publication of the article resulted in a letter from an oilburner service organization, with some comments on suction-line sizes. The following reply to this letter has been received from W. B. Adams, the author of the article.

NEW YORK, N. Y.

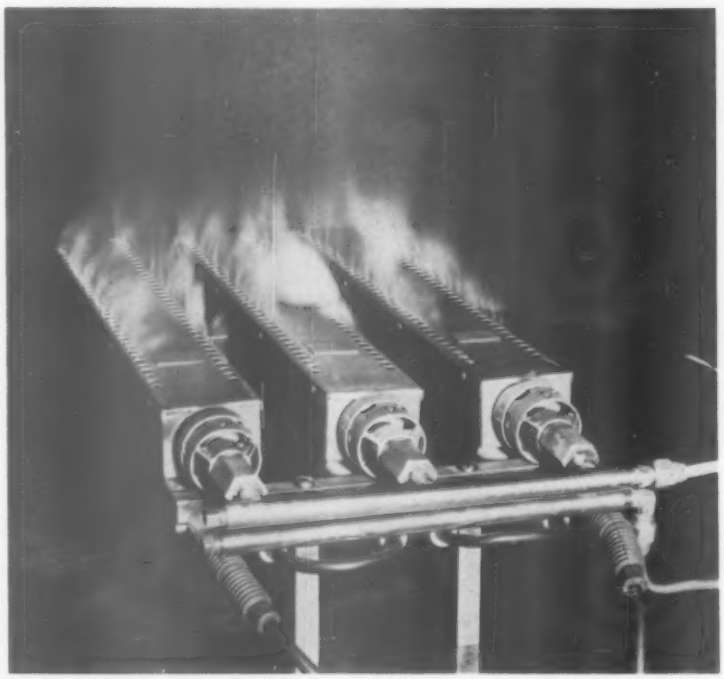
Editor:

On p. 28 of the July issue of FUELOIL & OIL HEAT is a letter from a serviceman commenting on my article in the April 1960 issue on how to end loss-of-prime trouble of gun-type oilburners.

The letter is highly enjoyable; to read highly practical and down-to-earth facts about servicing, written by a serviceman, always is a great pleasure.

To set the record straight for myself and FUELOIL & OIL HEAT, however, I must point out that seemingly the serviceman who wrote this letter is under somewhat of a misapprehension. The wrong idea affecting his thinking has in some way gotten

The Gulf Development continues



The development continues! The June issue of Fueloil & Oil Heat contained a detailed description of the Gulf-designed oilburner worked out in the Heating Oil Laboratory, Gulf Oil Corp., at Harmarville, Pa. The article reported the almost amazing things Gulf technicians have done with this burner, using an aspirating nozzle. (June 1960 issue, starting on page 43.)

Here's yet another variation in the way this Gulf-designed burner can be applied. This uses the same aspirating nozzle, with atomized fuel passing down through a chamber in the center of the rectangular box, then directed along each side to the row of holes where combustion takes place. Combustion noise is completely eliminated.

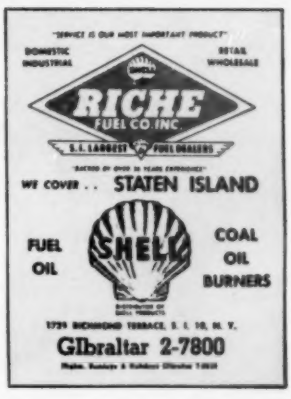
The basic burner consists of the aspirating nozzle, a flame tube made of stainless steel perforated, rotary air-pump, constant level valve and wall pump.

Below, left to right: James Richie, Sr., James Richie, Jr., and Andrew La Fata.

"50% of our new business comes in through the Yellow Pages!" says James Riche, Sr., Pres., Riche Fuel Co., Inc., Staten Island, N. Y. "Since we have no salesmen, we rely on our good name and the Yellow Pages to sell for us. Of the large number of new accounts we get in a year, half come in through the Yellow Pages. Two accounts we got through the Yellow Pages spend $1000 every year. We invest 75% of our ad money in the Yellow Pages—and it pays!" ■ Display ad (shown reduced at right) appears under OILS — FUEL, identifies Riche Fuel Co. as a SHELL OIL franchise. Call the Yellow Pages man at your Bell telephone office, and plan your program!

Find Us Fast in The Yellow Pages

Display this emblem. It builds your business!



THE TELEPHONE THAT NEVER RINGS

If you have ever wondered why your competitor never seems to be called back for service calls on residential boiler installations, it may be that he's using the amazing new Mt. Hawley 600 Series Boiler.

You see, the heating surface of the crown sheet in the 600 series is spread out over an area 7 times larger than most boilers, eliminating hot spots. And the no-baffle flue channels absolutely can not clog! Stack temperatures are much lower too, so that the 600 series operates at maximum efficiency all year 'round. No wonder the 600 series is setting a new standard in the field of residential boilers.

Available in both gas and oil and in either standard or deluxe package.

A few territories are still open for manufacturers representatives.

Mt. Hawley

Mt. Hawley Mfg. Co.
1209 W. Alta Road
Peoria, Illinois

Please send additional information regarding Mt. Hawley 600 Series

Name_____ Company_____

Address_____

City_____ State_____

around to quite a few servicemen, and right now is the time to pin things down—since this wrong idea has appeared in print, to my knowledge, for the first time.

In his letter which appeared in your July issue, this serviceman says: "If the installer used ½" suction lines for three years without trouble, I would say he was lucky. Why use ½" lines? For example, Sundstrand oil pumps have ¼" suction and return ports. I am of the opinion that ½" overloads the unit."

Wrong Impression

The installation being discussed was described in my April issue article as firing 10 gph, having ½" suction lines and return lines, and developing a suction-line vacuum of 15" to 16" with the pump running and the level of the fueloil in the tank 9' below the pump.

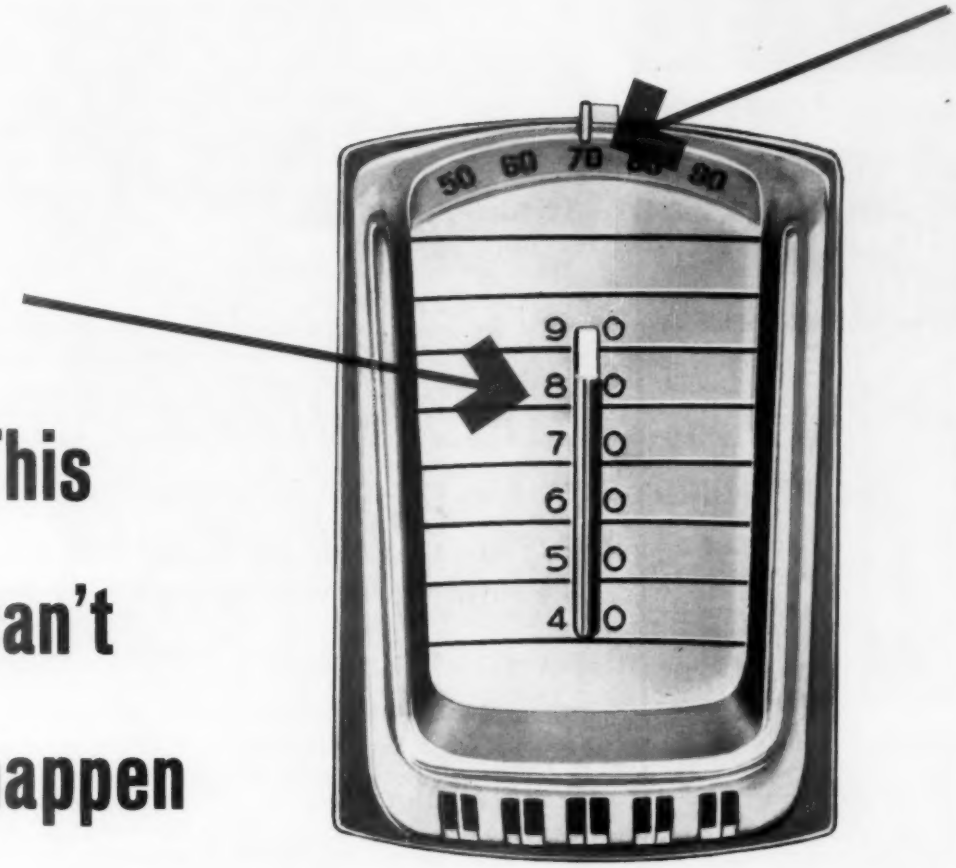
That suction-line vacuum of 15" to 16" is undesirably high as it is. It would be still higher, of course, if the suction line were ⅜", the size the writer of the letter recommends. Later in his letter he gives this as his first instruction for avoiding lockout trouble: "Use ⅜ OD copper tubing."

I am looking at a Sundstrand "Vacuum Chart" listing inches of pump vacuum in terms of lift in feet, and length of suction-line run in feet—and in terms of using ⅜" or ½" tubing. The instructions say: "In general, suction lines should be big enough to keep the vacuum below 10" of mercury although the S-1 pump is suitable for operations on installations with vacuum up to 15" of mercury."

The Sundstrand "Vacuum Chart" shows that, for example, an oil lift of ten feet and a 30 feet length-of-run for the suction line, the expected vacuum for a ⅜" suction line is 10", but the expected vacuum for a ½" suction line is 9".

Another Sundstrand instruction sheet gives maximum lengths for ⅜" suction lines (for different lifts) and instructs "if installation requires longer length than shown, use ½" line".

(*Please turn to page* 40)



This can't happen

with STAINLESS STEEL Combustion Chambers

"Over-Ride" and uncomfortable temperature fluctuations are minimized because combustion chambers made of Ingersoll's heat resisting types 442 and 446 stainless steel heat quickly and cool off quickly.

To save the furnace manufacturer's time, scrap, and reduce their costs, Ingersoll Steel will custom shear to fabricating size or multiples.

We invite manufacturers of oil-fired furnaces to call on us for assistance with their combustion chamber problems.

Write for Ingersoll's new full color facilities and products brochure "Experts in Specialty Steels."

Ingersoll makes and supplies the STEEL —NOT the chambers

ALL THESE ADVANTAGES, TOO

- **Quick heating (just seconds!) to combustion temperature.**
- **Saves fuel—cuts fuel cost. Instant combustion means more heat from fuel used.**
- **Provides cleaner heat through more efficient combustion.**
- **Light weight—easy to handle—no breakage.**

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Ingersoll STEEL DIVISION

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NEW CASTLE, INDIANA

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QUIET AUTOMATIC

HI-RECOVERY

OIL-FIRED HOT WATER HEATERS

3 types –

GLASS LINED

COPPER LINED

HI-TEST GALVANIZED

A.S.M.E. Controlled and Labeled

30 - 50 - 70 Gallons Storage

All With Hi-Recovery Features

Larger Glass - Lined and A.S.M.E. Heaters up to 650 gal. per hr.

For Launderettes, Motels and Hotels

TWIN COIL TANKLESS HOT WATER HEATERS

up to 6,000 gals. per hour

All Hi-Recovery Hot Water Heaters are equipped w/ world famous Quiet Automatic Oil Burners.

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Prompt Shipment from Warehouse Stocks in

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CHARLOTTE, N. C. COLUMBIA, S. C.

JACKSONVILLE, FLA. and MIAMI, FLA.

An oil pump never can be overloaded, of course, because the suction line is larger than ⅜".

Having the suction line larger than usual always helps an oil pump on an outside tank installation by reducing the suction-line oil velocity and tending to decrease the vacuum the pump must develop.

There are three good reasons for helping an oil pump by using a ½" suction line for a pressure burner instead of using a ⅜" line:

First, pumping rate of the installation is unusually high, as it may be on a job having a 10 gph firing rate.

Second, length of suction line is unusually great—is greater than, for example, 70 ft.

Third, oil lift from level of the bottom of the storage tank to the burner is unusually high.

The size of the ports of a fuel unit or oil pump has no relationship to the size suction line needed. Many oilburners and pump sets for No. 6 oil have suction-line ports of only ¾" or 1" size, but must be connected to 2" suction lines for proper operation of typical installations.

The instructions on fuel units and oil pumps give full details about proper suction-line sizes.

W. B. ADAMS

10-Year Outlook by Mobil Oil is a Feature of Iowa Fueloil Shindig

LEONARD S. MARSHMAN, one of three featured speakers at the July 12-13 fueloil symposium of the Iowa Independent Oil Jobbers Association, Des Moines, introduced slides and tables showing his Company's forecast of energy requirements and competitive fuel positions for the 10 years ahead. Marshman is manager of the Wholesale department for Mobil Oil Co., New York.

His company believes that total energy requirements of the United States will increase at a faster rate in the next ten years than they did in the past decade. Where the average annual increase during the Fifties was 2.6%, the outlook for the Sixties is a 3.5% yearly rise.

TABLE I shows Mobil's listing of 1959 energy requirements and sources, and compares these with a similar breakdown for the year 1969. It also looks back to a similar study in 1947. While the 1947-59 period showed a total energy increase in 12 years of 30.7%, the ten year projection ahead to 1969 calls for a rise of 41.1%.

Notice that the forecast expects coal to show a significant increase in the Sixties, due primarily to its increasing use for electric power and for heavy industry. This reverses its trend of the past decade.

In studying this table it is important to recognize that "oil" refers to all petroleum products, not just fuels. Thus there is no direct prediction of fueloil versus natural gas for space heating. At the same time, the indicated growth rates are very significant.

For example, electric heating in the past has flourished in the areas of cheap water power, which is not expected to grow much. Its future expansion must be more in higher rate regions.

TABLE II provides a look ahead at

TABLE I

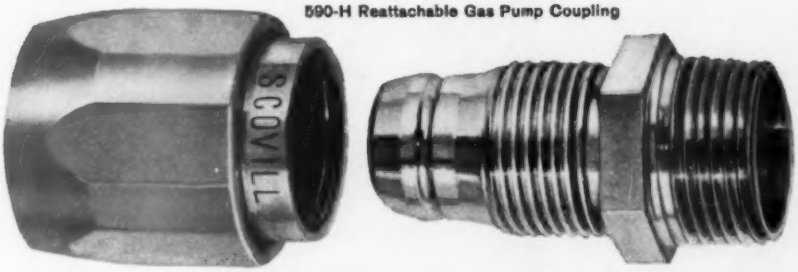
Total Energy Requirements

United States

(In Trillion Btu's)

	1959				1969			
Fuel	*Trillion Btu*	*% of Total*	*% Chg. from 1947*	*Avg. Annual % Chg.*	*Trillion Btu*	*% of Total*	*% Chg. from 1959*	*Avg. Annual % Chg.*
Coal	10,047	23.4	(35.3)	(3.6)	13,110	21.7	30.5	2.7
Oil	19,525	45.5	71.8	4.6	25,763	42.5	31.9	2.8
Natural Gas	11,696	27.2	158.9	8.2	19,044	31.4	62.8	5.0
Water Power	1,691	3.9	15.9	1.2	2,011	3.3	18.9	1.7
Nuclear	—	—	—	—	679	1.1	—	—
Total	42,959	100.0	30.7	2.3	60,607	100.0	41.1	3.5

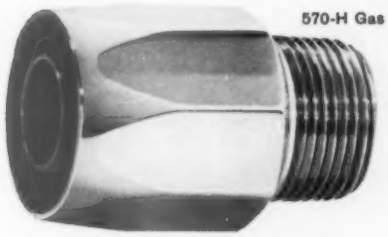
590-H Reattachable Gas Pump Coupling



520-H Fuel Oil Coupling, Permanently Attached

HOSE COUPLINGS BY SCOVILL ANSWER ALL 3 VITAL QUESTIONS

570-H Gas Pump Coupling, Permanently Attached



When you next specify fuel oil and gas pump couplings, ask yourself these 3 vital questions...

1 *Where can I get economical, dependable couplings?* Scovill was the first to design and manufacture couplings for modern hoses—and is, today, the nation's leading supplier of fuel oil and gas pump couplings. With Scovill couplings, you are assured top quality, trouble-free operation. Anchorage on Scovill couplings is positive and permanent (Scovill couplings are subjected to as many as 7,000,000 cycles in flexing tests without signs of failure!) Scovill ferrules are of high strength, cold drawn copper alloy with straight sides that parallel the body. They have rounded edges—will not snag on curb stones or shrubbery. And the retaining grooves in female section hold washer in place—prevents loss when coupling is disconnected!

2 *Where can I get immediate delivery?* Scovill maintains a wide range of strategically placed sales offices and warehouses. They stock a full line of all couplings—from ¾″ to 3″ in fuel oil couplings . . . and all standard sizes in gas pump couplings. Orders are processed and shipped without delay. 3 *Where can I get immediate service and expert advice?* Scovill has the largest—and the finest—sales and service force in the industry. They stand ready to consult with you wherever and whenever you wish. *For complete information, write: Scovill Manufacturing Company, Industrial Coupling Division, Waterbury 20, Conn.*

Hose couplings by **SCOVILL**

MAIN OFFICE: 99 MILL STREET, WATERBURY, CONN. • CLEVELAND: 4635 W. 160TH ST. • GREENSBORO: 1108 EAST WENDOVER AVENUE • HOUSTON: 2323 UNIVERSITY BLVD.
SAN FRANCISCO: 434 BRANNAN STREET • TORONTO: 334 KING STREET, EAST

heating oil demands, in the Company's opinion. In the coming ten years the number of central oilheating users is expected to rise by 2,300,000. This compares with an increase of 5,200,000 in the past decade.

Neither figure is a measure of sales of oilheating equipment, because replacements are not considered. Rather, these data measure the growth in the number of fueloil users.

TABLE II
Heating Oil Trend In United States

Units	*1959*	*1969*	*Avg. Annual % Chg.*
Oil Burners	9,400,000	11,700,000	+2.2
Consumption per burner (gallons)	1,566	1,512	—
Total Consumption (Millions of bbls.)	350.4	420.8	+1.7

The small reduction expected in the consumption per burner will be "due to the new, more efficient burners, the improving of efficiency of the present burners in the field and the greater use of home insulation."

Other speakers at the symposium were Charles Burkhardt, managing director, Oil-Heat Institute of America, Frank Scully, Jr., of Scully Signal Co., and Robert Gray, editor of FUELOIL & OIL HEAT.

Burkhardt put a lot of emphasis on the necessity for Iowa fueloil marketers to take a more direct interest in the servicing and sale of oilheating equipment. He feels that while it is useful to conduct promotional and advertising campaigns for oil heat the oil man must assume the full responsibility for making oilheating as efficient and desirable as claimed.

Scully conducted a special business session in the morning, explaining the new fueloil handling methods.

Gray discussed today's excellent margins in the face of low market prices generally prevailing, and urged the oil men to spend both time and money to fortify today's favorable profits.

On the second day a panel discussion of fueloil and oilheating problems in Iowa was conducted by the four speakers plus three Iowa marketers, Robert Cushman, Russell Ritter and Claude Shelton. All arrangements for this first Oilheating Symposium were handled by Lyle Munson, executive secretary of the Association.

Eureka Williams merges with National Union Electric

C. RUSSELL FELDMANN chairman, National Union Electric Co., announced a merger with Eureka Williams Corp. National Union Electric, which will be the surviving corporation of the merger, manufactures furnaces and air conditioners in its Armstrong Furnace Div., Columbus, O.

Eureka Williams manufactures Williams Oil-O-Matic oilburners and has plants at Bloomington, Illinois and Canastota, N. Y.

Oilheating industry friends shown with Simon Dimet, Simon Oil Co., Niagara Falls, N. Y., after he received the 1960 Brotherhood Award, given by the Niagara Falls Chapter, National Conference of Christians and Jews.

Left to right: Reg Newman, Newman Oil Co. and president, Buffalo OHI; John Wynes, Wynes Petroleum; Joseph Weber, Weber Oil; Simon Dimet; Bernard Levy, Niagara Oil Heat Association; Morton Dimet, son; W. D. Hibbard, Home Oil Co.; Theodore Dimet, son, Lloyd Schrack, Schrack Coal & Oil; Eugene Dimet, son.

Light Duty Service

OPW LOADING ASSEMBLIES

FOR LOADING BULK LIQUIDS

YOU CAN NOW AFFORD TO DISCARD YOUR MAKE-SHIFT LOADING DEVICES. INSTALL ONE OF THESE LONG-LIVED, TOP QUALITY, COMPLETE ASSEMBLIES, DESIGNED TO KEEP LOADING COSTS DOWN, DELIVERIES HIGH.

Nos. 720 and 721, high quality Loading Assemblies for small bulk plant operations having gravity flow or pressure up to 30 psi on 2" size, and up to 25 psi on 3" size.

PRICED AS LOW AS $91.35

No. 720
Counter-Balanced unit for easy fast service in general installations.

No. 721
For bulk plants where arm is supported in hanger when not in use.

OPW CORPORATION
2723 Colerain Ave., Cincinnati 25, O. • Phone Kirby 1-5400
VALVES • FITTINGS • ASSEMBLIES FOR HANDLING HAZARDOUS LIQUIDS

"HEAD START" to BIG PROFIT opportunities...

U. S.-CARLIN *Genuine* SHELL-HEAD OIL BURNERS

▼ The flame of conventional burners often has long, smoky tips indicating incomplete combustion . . . . . and inefficient operation.

◀ Shell Head produces a uniform cone-shaped flame. It is bright, clean, highly concentrated, giving maximum efficiency — and more heat per fuel oil gallon.

U.S.-Carlin SHELL HEAD oil burners offer you more to sell for MORE PROFIT . . . fuel savings as high as 36%, cleaner firing, the nearest practical approach to perfect combustion yet developed in oil heating.

Tried and proven in thousands of installations over a 10-year period of U.S.-Carlin manufacture, Shell Head is foolproof in design, has no complicated parts to get out of order, and is easily adjusted for peak performance. An ever-widening popularity in oil heat markets throughout the world is indicated by the fact that *over half* of the U.S.-Carlin oil burners sold today are Shell Head equipped.

Ask your wholesaler for full details of advanced-design U.S.-Carlin Shell Head oil burners . . . the line with BIG profit opportunities in today's BIG remodeling-replacement market.

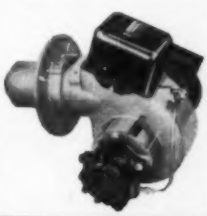
WHAT IS "SHELL HEAD"?

Shell Head extracts maximum heat from every drop of fuel . . . generates flame temperatures from 400 to 600 degrees higher than conventional burners. The design of this skillfully engineered unit permits exact regulation of two sources of air supply to the flame and produces a thorough mixing of air and atomized oil for highest combustion efficiency. Top performance is obtained with either catalytic cracked or straight-run distillate fuels.

Further economies result from Shell Head's cleaner fire; there is no layer of heat-robbing soot (actually unburned oil) deposited on the interior heating surfaces of boilers or furnaces to act as an insulator.

SHELL HEAD TO 12 GPH, OTHER MODELS TO 25

PEDESTAL OR FLANGE MOUNTED MODELS



ELECTRONIC CONTROLS, FACTORY MOUNTED

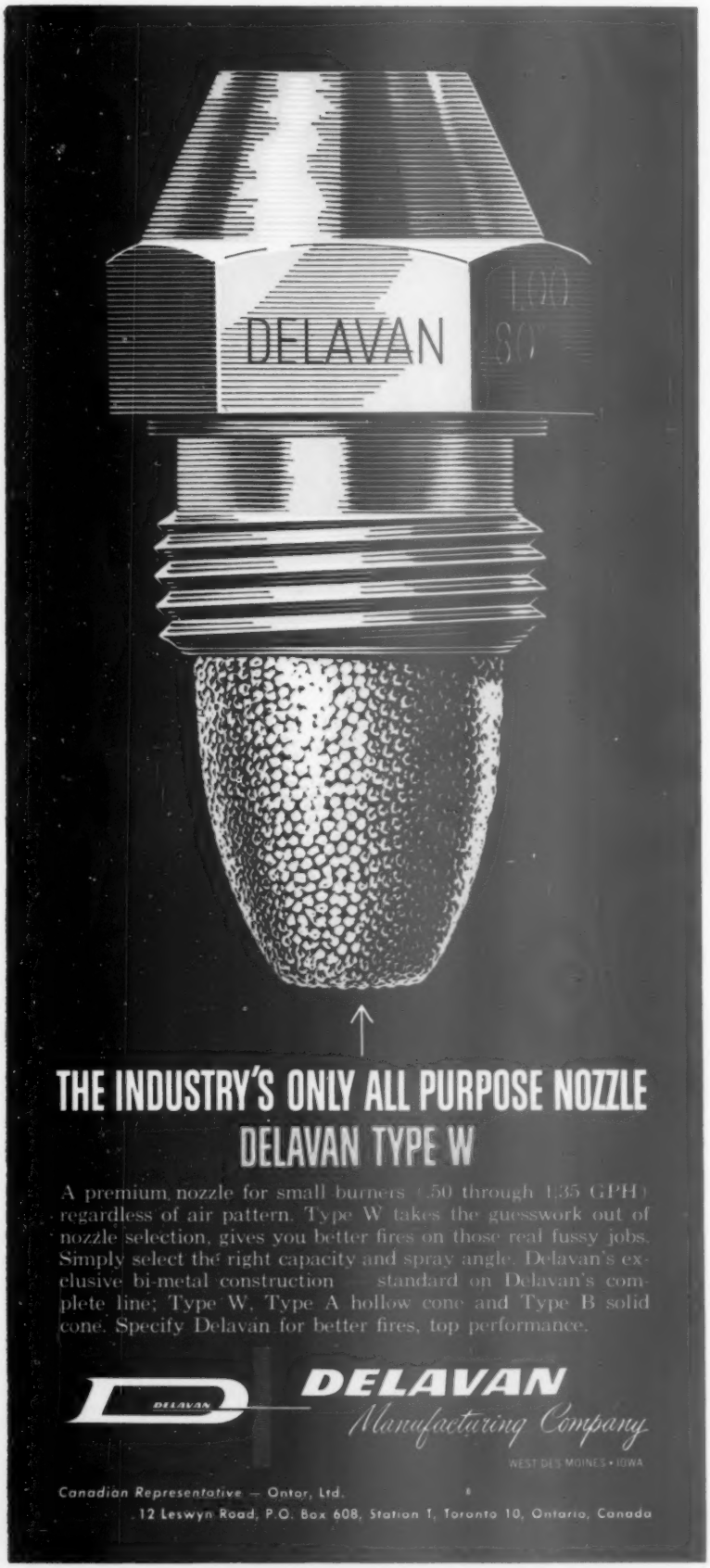
OIL-FIRED WATER HEATERS

OUTSELLS BECAUSE IT EXCELS

THE CARLIN COMPANY • WETHERSFIELD, CONN.

MID-WEST REPRESENTATION – COMPLETE BURNER STOCKS AT CHICAGO

U.S.-Carlin burners are listed by Underwriters' Laboratories, Inc. and approved under U.S. Government Commercial Standard CS75-56 where applicable.


DELAVAN
THE INDUSTRY'S ONLY ALL PURPOSE NOZZLE
DELAVAN TYPE W
A premium nozzle for small burners (.50 through 1.35 GPH) regardless of air pattern. Type W takes the guesswork out of nozzle selection, gives you better fires on those real fussy jobs. Simply select the right capacity and spray angle. Delavan's exclusive bi-metal construction — standard on Delavan's complete line; Type W, Type A hollow cone and Type B solid cone. Specify Delavan for better fires, top performance.
DELAVAN
Manufacturing Company
WEST DES MOINES • IOWA
Canadian Representative — Ontar, Ltd.
12 Leswyn Road, P.O. Box 608, Station T, Toronto 10, Ontario, Canada

Oregon OHI hears Talk about fueloil Additives

ON JUNE 17 the Oil-Heat Institute of Oregon, Inc., held a regional meeting at Salem, Oregon. A portion of the program was devoted to a talk by John J. Valk, Jr., Hy-Test 303 Corp., on "The Use of Additives in Fueloil."

He reviewed the history of heating oils and their composition, and told the group:

"It is no secret that other fuels have been cutting sharply into our markets. Many of their claims are open to question. Certainly none is as economical as oil heat. In these days of rising costs this can be made one of the few bright spots in the homeowner's picture. It is up to us, however, to prove that oil heat is also a modern heat, a clean heat, a dependable heat and above all a safe heat. A source of heating comfort regardless of the severity of the season.

"We in the heating oil industry must face the challenging future of our business with resolution and a positive attitude—one that contemplates, not defeatism, but investment and expansion in growth."

OHI of British Columbia elects Kennedy President

W. B. KENNEDY, Furnace Oil Supply Co. Ltd., was elected president of the Oil Heat Institute of British Columbia at the annual meeting June 20 in Vancouver.

Kennedy

Other officers are: Matt Henry, Watkins - Winram Fuel Co., immediate past president; W. J. Morrow Fuel Oil Sales Ltd., vice president; Al Taylor, treasurer. Among the directors are D. A. Birnie, J. J. McCurrach, and W. B. Heady.

65 years new

GAS FIRED

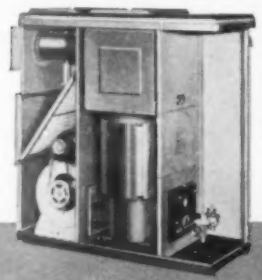
Assembled and Wired Winter Air Conditioners . . . Upflow, Counterflow and Horizontal . . . Heavy Gauge Heat Exchanger and Cabinet.

OIL FIRED

Assembled and Wired Winter Air Conditioners . . . Upflow, Basement and Counterflow Heavy Gauge Round Heat Exchanger with Refractory Firebox

GAS OR OIL FIRED

Basement Type Winter Air Conditioners . . . Burn either Gas or Oil with Equal Efficiency . . . Heavy Gauge Heat Exchanger.



65 years of reliability, constantly improved with new ideas.

This is why today's complete line of Moncrief Furnaces and Air Conditioners is more competitive and desirable than ever.

The old, reliable quality of sturdy, heavy construction remains substantially unchanged. Moncrief's excellent, dependable performance is ever guarded by 65 years of manufacturing experience.

Meanwhile, new ideas have been applied to product design and to manufacturing processes.

Today's Moncrief Units are increasingly compact, are completely assembled and wired wherever practical, and are designed for utmost flexibility in heat-cooling combinations.

Volume production with up-to-the-minute methods makes possible prices that are competitive with those of cheaply constructed units.

Moreover, your Moncrief Wholesaler eliminates the need for you to stock in large quantities. Call him, today!

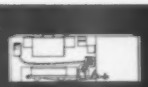
MONCRIEF

THE HENRY FURNACE COMPANY • MEDINA, OHIO

MONCRIEF SINCE 1895

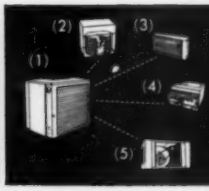
HEATING AND AIR CONDITIONING UNITS

FURNACE PIPE AND FITTINGS



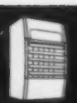
Horizontal Furnaces 4 Oil Sizes 4 Gas Sizes

Year 'Round Combination A.C. Units Air or Water Cooled, Gas or Oil Fired



(1) 2, 3, 4, 5 H.P. Air Cooled Condensing Units. (2) Plenum Evaporator, (3) Duct Evaporator, (4) Counterflow Evaporator, (5) Blower-Evaporator Unit.

Gas Conversion Burners



Gas Fired Unit Heaters, 5 Models

STURDIER CHASSIS!
STRONGER CAB!
HEFTIER SUSPENSION!
HUSKIER ENGINES!

CHEVY'S PUT TOGETHER TO STAY TOGETHER... TO CLAMP DOWN ON COSTS!

NEW STRONGER CAB CONSTRUCTION . . . to add years to the life of your truck. Tough new steel braces reinforce cab underbody, help keep cab tight and solid, provide a sturdy foundation for long cab life. Husky new box-section pillars frame door openings; keep doors in lasting alignment. New roof panel is double walled for extra strength.

NEW STURDIER CHASSIS COMPONENTS . . . steel muscled truck stamina where it counts! New *frames* provide a new box-section rail design that's stronger than ever; torsional stiffness is increased up to 480%! Massive "X" or "K" brace cross-members resist damage from frame twisting like never before. And *brakes* are bigger, for longer brake life and safer stopping. Bigger capacity *suspensions* and *axles* boost load-carrying ability.

TRUCK-BUILT V8's AND 6's . . . famous Chevy engines that know the most about saving money on fuel and maintenance. Brawny forged steel crankshafts assure extra endurance; long-lasting precision bearings minimize wear; full-flow oil filters protect moving parts from harmful dirt. These and many other truck-built engine features provide sure dependability that keeps your maintenance costs *down* for extra thousands of miles.

NEW HEFTIER SUSPENSION protects everything from wear and tear . . . and gives the ride that's revolutionized trucking. Chevy's new independent front suspension system is as *tough* as it is smooth. Rigid control arms, strong alloy steel torsion-bar springs, new low friction steering linkages are engineered to take your toughest runs with strength to spare.

Here are the strongest truck components known . . . assembled lastingly, with care and craftsmanship. It's Chevrolet's way of making sure you get maximum truck life; extra assurance of higher profits because of far fewer maintenance and repair charges.

■ When it comes to putting out a good day's work at least expense, a '60 Chevy truck knuckles under to nobody. Because, as we're showing you here, Chevrolet's building 'em *tough* these days, even tougher than ever before. And that's saying something when you consider how Chevrolet trucks have stood up over the years. Here's a typical example:

600,000 miles—and still going strong! Here's ironclad evidence that Chevrolet trucks *last*. Since 1947, this Chevy middleweight has been averaging 1,000 miles a week, carrying big loads of sand and gravel for Lester Hall of Alexandria, Va. It has logged an amazing total of 600,000 miles and according to the owner, it's still a lot of truck! (The original engine—a Chevrolet Loadmaster 6—went 350,000 miles before it had to be replaced!)

That kind of performance has been Chevy's stock-in-trade for years; and the '60's are designed to put out even more of it. Next time you're in the area, drop by your Chevrolet dealer's. Find out for yourself why more truckers than ever before are getting more work and earnings out of Chevrolet trucks. And make sure you *test drive* a '60 Chevy. You'll wonder how you've managed without one! . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

1960 CHEVROLET STURDI-BILT TRUCKS CHEVROLET

*TRADE IN YOUR OLD VOLTAGE TESTER!

READ

voltage and amperage in a snap!

A voltage "indication" doesn't give you all the information you need to do a job right. You want a precise voltage *reading*, measured on a calibrated scale... and you get it with the AMPROBE JR. But sometimes voltage is only half the story. Most jobs require an accurate *current* reading too. The pocket-size AMPROBE JR. provides it — in a snap — *without* interrupting service! Why settle for anything less?

*SPECIAL OFFER

Trade up to an AMPROBE JR. *now*. For a limited time only, we'll give you a sturdy leather case plus the AMPROBE ENERGIZER (to multiply the JR.'s sensitivity *ten times*)—an *$8 value*—for *only $1* and your obsolete voltage tester! The leads come with the JR. Snap up this offer today—at your distributor.

Amprobe Jr.
snap-around volt-amp tester
$19.85

PYRAMID INSTRUMENT CORPORATION, LYNBROOK, NEW YORK
Serving the Electrical Testing Needs of Industry

Better Heating-Cooling Council develops new home sales Kit

A NEW HOME builder sales kit is available to dealers who want to expand their hydronics business in the new home market, from the national Better Heating-Cooling Council.

The sales kit is a complete package; basic components include: 1. a detailed "how to" sheet on the methods of applying the kit; 2. a looseleaf handbook which the dealer can offer to the builder's salesman to make him a "heating expert"; 3. an outline for a "home salesman's training session" on hydronics; 4. Baseboard and boiler stickers which can be affixed to the hydronic heating system in the model house to identify the system as the "Heart of the House." Outdoor signs are also available; 5. Literature designed as "take home" pieces.

The complete home builder sales kit is available for $1.60 from BHC or its manufacturer members. For more information write to the Better Heating-Cooling Council at 250 Park Avenue, N. Y. 17, N. Y.

Henry Palmer is new President of Delaware Valley Association

MEMBERS of the Delaware Valley Fuel Oil Dealers Association recently elected Henry P. Palmer, Jr., president. Serving with him will be Angelo Quattrocchi, vice president; William Hobensack, secretary; and Peewee Harris, treasurer. Ross E. Leader and Franklin A. Terry are directors.

OHI asks End of Battle against Type B Flues

BECAUSE of the new oilheating equipment now being marketed, the Oil-Heat Institute of America, Inc., has issued a bulletin suggesting that local groups cease the attempt to secure all-purpose chimney ordinances.

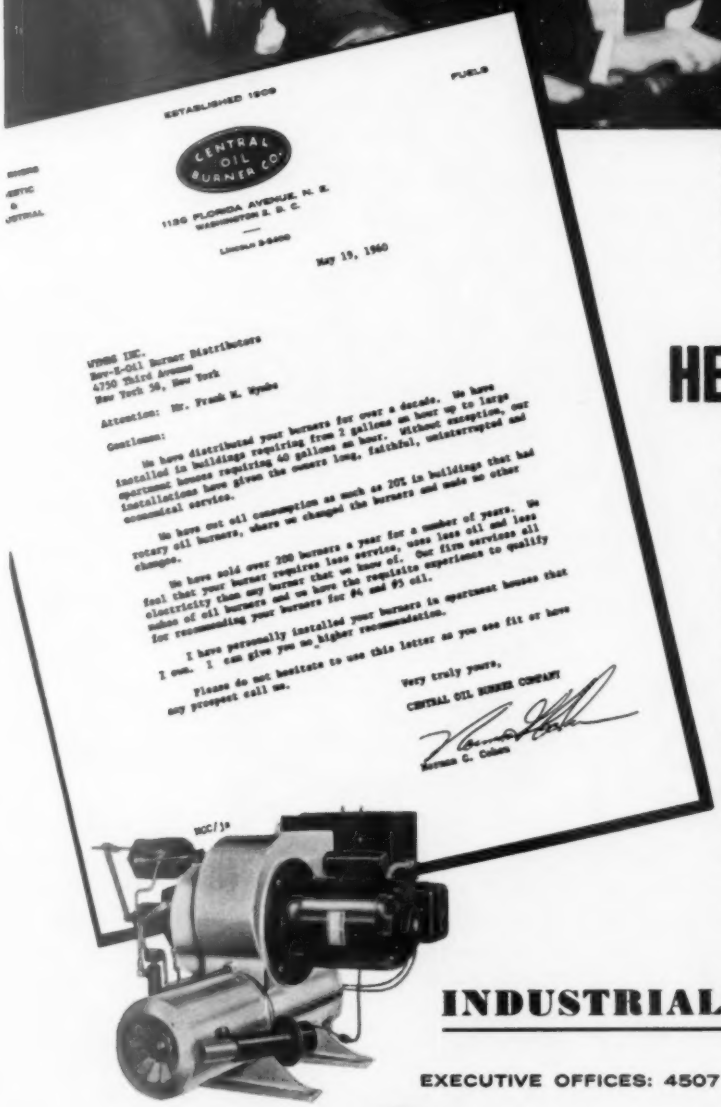
For many years, the industry has vigorously worked for legislation banning the use of B-type Flues. However, in the opinion of the Association, such legislation is now obsolete. There are now a number of oilburners producing much lower flue gas temperatures so that the all-purpose chimney is no longer a necessity.

(*Please turn to page* 118)

EXPERTS AGREE:

"Hev-E-Oil burners require less service, use less oil and less electricity than any burner we know of"

PANEL OF EXPERTS — Established in 1909, Central Oil Burner Company draws on a wealth of oil heating experience. At right is Mr. Norman Cohen, President. In the center is Mr. Kal Steiner, Central's Vice President in charge of engineering and a nationally recognized fuel authority. At left, Mr. S. Robert Cohen, Secretary-Treasurer.



ESTABLISHED 1909 FUELS

CENTRAL OIL BURNER CO.

1120 FLORIDA AVENUE, N. E.
WASHINGTON 2, D. C.

May 19, 1960

VYNNE INC.
Hev-E-Oil Burner Distributors
4750 Third Avenue
New York 56, New York

Attention: Mr. Frank M. Wynne

Gentlemen:

We have distributed your burners for over a decade. We have installed in buildings requiring from 2 gallons an hour up to large apartment houses requiring 40 gallons an hour. Without exception, our installations have given the owners long, faithful, uninterrupted and economical service.

We have cut oil consumption as much as 20% in buildings that had rotary oil burners, where we changed the burners and made no other change.

We have sold over 200 burners a year for a number of years. We feel that your burner requires less service, uses less oil and less electricity than any burner that we know of. Our firm services all makes of oil burners and we know the requisite experience to qualify for recommending your burners for #4 and #5 oil.

I have personally installed your burners in apartment houses that I own. I can give you no higher recommendation.

Please do not hesitate to use this letter as you see fit or have any prospect call me.

Very truly yours,
CENTRAL OIL BURNER COMPANY
Norman C. Cohen

NCC/js

HEV-E-OIL BURNERS

You'll agree with the experts when you see how HEV-E-OIL commercial-industrial burners assure efficient, economical operation — perfect fire control regardless of weather or draft conditions. Low-pressure air atomization is the big secret of success — accurately metered oil and air for the best in economical performance.

If you own, specify, install or service burners, HEV-E-OIL burners will save you money. Ten sizes, 1 to 150 gph. Adapt to all standard heating boilers. Send for free bulletin. Write Industrial Combustion, Inc., 4507 N. Oakland Ave., Milwaukee 11, Wisconsin. Dept. FO-80.

INDUSTRIAL COMBUSTION INC.

EXECUTIVE OFFICES: 4507 N. OAKLAND AVE., MILWAUKEE 11, WIS.

NEW FLAME DETECTOR makes possible the FIRST

KWIK-SENSOR
by WHITE-RODGERS

Kwik-Sensor can be applied by the manufacturer to any domestic oil burner in minutes... and no adjustments or relocation of the flame detector are necessary even though the burner may be used in different types of furnaces or boilers having various types of combustion chambers.

Fast, Simple Installation

The Kwik-Sensor flame detector need only be positioned to pick up the radiant rays of the oil flame. The primary control can be mounted in or on the burner, in the furnace or boiler vestibule, or in any convenient spot. No special engineering required.

Instantaneous Response

Unlike heat-sensing control elements that require a time interval to respond, the Kwik-Sensor is a flame-sensitive resistor which reacts *instantly* to flame ignition or extinction. It responds only to the *radiant rays from the oil flame* and not to heat from the red-hot refractory or light from the ignition spark.

New Flame Detector Location

The Kwik-Sensor flame detector is mounted at the blower end of the burner assembly—away from the flame area. Here it operates in a clean, cool stream of air—where field tests have proved it is not affected by soot, dirt or heat, and where it does not disturb the primary air pattern or interfere with servicing of burner.

Complete "Factory Checked" Equipment

Kwik-Sensor makes possible a *fully wired* furnace, burner or boiler unit . . . all quality controlled *in the factory*. This means production-line economies . . . simplified inventories . . . and the elimination of problems long associated with the many variables of in-the-field stack mounted control installations.

Write now for specifications, dimensions, wiring diagram, and additional facts.

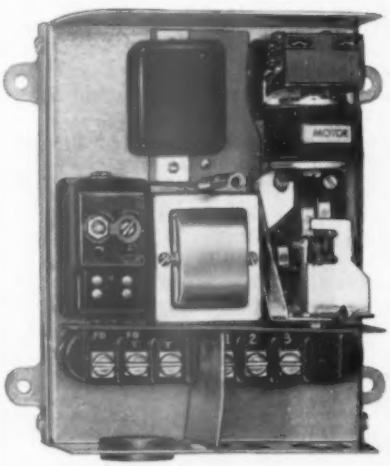
Practical Burner-Mounted Oil Burner Control

Not an Electronic Control

The Kwik-Sensor has no transistors, amplifiers or vacuum tubes. It is a simple, safe, dependable design using a new flame detector to operate standard primary control elements familiar to any serviceman. No educational programs are necessary.

Fail-Safe Operation

Kwik-Sensor protects against flame failure, ignition failure and power failure. Because of its split-second response, Kwik-Sensor puts standard domestic primary safety components into action with greater speed than any other flame detector now on the market.



Type 660-3 Kwik-Sensor
Primary Control
(constant ignition)

Type 956-1
Kwik-Sensor
flame detector

TYPE 120-215 D'LUXline Thermostat
Sealed mercury contacts. Adjustable heat anticipation. Exclusive level bubble mounting aid. Distinctive straightline styling. Terra-beige case, clear plastic face with etched gold dial, birch veneer background.

NOW...

the Perfect Control Package for Domestic Oil Burners

WHITE-RODGERS

St. Louis 6, Missouri, 1209 Cass Avenue
Toronto 8, Canada, 611 Gerrard St. East
Basel, Switzerland, Münchensteinerstrasse 2

Not Only Less Costly... But Better!

If you are seeking better Air Conditioning Units at lower prices, you have a good start with the complete, new Luxaire Line.

But don't stop there!

Examine the Zinc Coated, 16 Gauge Cabinets of rugged Luxaire Condensing Units. Take off the access panels. Note the modern, uncomplicated design and construction.

Take a good look at Luxaire Cooling Coils. See how the round Plenum Coil provides more surface in less space, plus vertical condensate drainage. Inspect the compact Duct Coil with Enameled Casing and Built-In Condensate Pan. See how the Zinc Coated Drain Trays of the Counterflow Coil capture maximum condensate, and how easily the coil slides into the Casing!

Discover the complete flexibility of the all-new Luxaire Blower-Coil Unit that affords either Horizontal or Vertical Discharge, and either End, Bottom or Side Intake.

Now, recheck the prices and compare the performance. You'll find the prices low, the ratings high!

Your Luxaire jobber offers you all of these advantages, and without the disadvantage of your having to stock a large inventory!

Upflow Gas and Oil Furnaces — Plenum Cooling Coil

Counterflow Gas and Oil Furnaces — Counterflow Cooling Coil

Horizontal Gas and Oil Furnaces — Duct Cooling Coil

Basement Gas and Oil Furnaces — Plenum Cooling Coil

Combination Year 'Round Units — Gas or Oil Fired — Air or Water Cooled

THE Luxaire® C. A. OLSEN MANUFACTURING COMPANY • • ELYRIA, OHIO

HEATING & AIR CONDITIONING UNITS

IBM data Processing handles degree-day and accounting Procedures for Hoosier Coal and Oil Co.

Punched-card Efficiency

by Edgar S. Joseph, Jr.*

AT THE HEIGHT OF A COLD SNAP last winter, a fueloil customer called the Hoosier Coal and Oil Co. office to report that his tank virtually was empty. Would we make a rush delivery to fill it?

A quick reference to the master file of punched cards on which we keep our customer delivery records indicated that the man's tank should have been nearly half full. We suggested that his gauge might not be operating properly. Within a few minutes the customer called back to confirm our diagnosis. He had tapped the gauge a few times, and it quickly showed his tank was half full.

Our ability to pinpoint the fuel status of one customer out of the 20,000 we serve within a matter of seconds, was based on Hoosier Coal and Oil's new punched-card degree-day accounting procedures. Punched-card mechanization with IBM equipment is the backbone of the Keep Full service we provide 75% of our customers.

It enables us to stress in our promotions that Hoosier Coal and Oil works with ". . . IBM computers which automatically analyze and compute your fuel deliveries to assure an ample fuel supply at all times, while they provide you with the most accurate billing, the most complete information about our fuel service."

Placing stress on our automatic accounting techniques, we feel, gives us an advantage over other companies which also offer "keep full" services of some kind. In effect, we're telling consumers in the Indianapolis area that they have no worry about running out of oil because of our electronic efficiency.

Punched-card machine accounting, however, is much more than a promotional device. It reaches into the very heart of our company's operation to improve internal performance and customer relations in these important areas:

We prepare neat, error-free, machine-printed delivery tickets. Our office no longer is burdened with the tremendous job of typing approximately 1,000 delivery tickets a day.

Invoice billing with each delivery has replaced preparation of nearly 14,000 monthly statements. This has speeded up the flow of payments, improving our receivable picture.

Customer service has reached a new peak of efficiency. This is the key factor for our company and its customers alike. More than 90% of all customer inquiries can be answered instantly after reference to an IBM punched-card which tells us the date and amount of each delivery and the degree-days which have occurred since the last delivery. Internal accuracy, which guides delivery schedules, has stepped up so that in the first winter our punched-card system was in operation, we had fewer out-of-oils than ever before in the company's 37-year history.

Our primary motivation in installing IBM punched-card data processing equipment was to move ahead of a competitive market. Punched-card procedures will enable us to meet any foreseeable growth with better service at less expense. At the same time, machine accounting techniques which improve customer service and create good will help contribute to that growth.

The extent to which punched-card techniques have modernized our operation is apparent in the degree-day accounting which governs the Keep Full system. In the past, posting clerks used slide rules or bookkeeping machines to develop the date and amount of each delivery. This meant that an

*Vice-president, Hoosier Coal and Oil Co., Indianapolis, Ind.

employee had to analyze each delivery individually to be sure a customer did not receive too much or too little oil. Deliveries now are machine-analyzed, and irregular deliveries are singled out for further analysis. As we establish more extensive histories on each account, the number of deliveries which must be analyzed on the basis of exceptions-from-the-normal will be reduced greatly.

Our degree-day clock electronically records variations in temperature as they take place. Using 65 degrees as a base figure at which no fuel is used in heating a home, the conventional method of averaging out the temperatures might erroneously show no degree-days during a 24-hour span which is warm in the afternoon, but cool at night. Our electronic clock records and averages the actual number of degrees of temperature below 65 in each 24-hour period. It thus provides an accurate indication of the degree-days which take place—and of the fuel consumption during that period.

Keep Full System

The data on degree-days, customer name and address, type of oil used, and previous delivery is punched into IBM cards. A file of these cards, which can be processed through our IBM machine accounting equipment, makes our automatic Keep Full system function.

Each week we machine-search the file for the cards of customers who will require deliveries during the following week on the basis of the anticipated accumulation of degree-days.

A three-part delivery ticket set is printed on the accounting machine after the sorter has sequenced the degree-day cards in delivery priority order based on the projected fuel usage. The tickets are held in the dispatching department, while the cards themselves move through a credit check.

When credit approval is given, the cards move to the dispatcher so that he can make up his truck loads. The delivery tickets are given to the truck drivers and the degree-day cards held as a control. The dispatcher knows that a copy of the delivery ticket must be returned for every degree-day card he holds in his file.

Before each delivery, the driver places the delivery ticket in a meter on his truck so that the starting and ending readings are imprinted on the ticket automatically. He then gives one copy of the ticket to his customer and returns two copies to the dispatcher. A copy of the ticket and its matching degree-day card are returned to the machine accounting department, where calculation and comparison of actual and ideal deliveries will be made for adjustment of future degree-day cards.

Transaction Cards

In machine accounting, a card punch operator creates a transaction card for each delivery ticket that is returned. After certain machine operations have determined that delivery ticket and truck load volumes are in balance, the transaction cards are processed through our IBM calculating punch, which extends gallons delivered by the price per gallon for the grade of oil delivered. This computation is punched into each card.

With name, address, type of service, and credit code information picked up from other IBM cards, the priced transaction cards are used to print a daily sales listing. This report serves as an accounts receivable control and also provides sales information to management.

At this point, we are ready to create the updated degree-day cards on which the next Keep Full delivery will be based. Pertinent information—including a degree-day reading from our electronic clock—is reproduced automatically from the transaction cards. The transaction cards—punched from the delivery tickets which have been brought back by our drivers—also are used to reproduce invoice cards. These punched-card invoices are interpreted, so that all punched information also appears in printed form on the face of this card, which is then mailed to our customers.

New and old degree-day cards are machine-matched, and constant information from the old cards is punched into the new ones. The calculating punch updates the information as follows:

Gallons-to-date on the old card and gallons delivered on the new card are added, and the accumulated gallonage is punched into the new degree-day card.

The date of the current delivery is added to the customer's "set" (the number of degree-days which should elapse between deliveries), and a new projected delivery point is developed and punched into the card.

A calculation determines if the actual gallons delivered fall within a specified tolerance of what should have been delivered on the basis of elapsed degree-days. Cards which do not fall within this tolerance are signal-punched, sorted out and sent

Top: Paul Stauber, oil manager, Hoosier Coal & Oil Co., takes daily reading from clock which measures degree-days. Bottom: Stauber posts degree-day totals for month and season to date. Punched into IBM cards, degree-day data initiate fueloil deliveries to the company's Keep Full customers.

Front cover photo

Modern machine accounting department shown handles degree-day accounting for Hoosier Coal & Oil Co., Indianapolis, Ind. The company, which has 20,000 customers in the area, stresses use of IBM equipment in its advertising and promotion to emphasize precision deliveries and the prevention of run-outs.

to our oil manager for analysis. He determines if the "set" is correct or if other factors have changed the customer's rate of oil consumption.

Old and new degree-day cards then are separated—the new card going into file to be ready for the next delivery. A new piece of equipment enables us to consolidate a customer's entire history of fuel purchases onto a single card. This machine, an IBM selective line printing interpreter, utilizes a photo-electric cell to print information on the next available line. Each purchase is noted on the same card, so that responses to customer inquiries are even faster than before.

Our accounts receivable procedure is tied in closely with degree-day accounting for Keep Full customers. In a large percentage of cases, when customers make payments, they return a portion of the stub IBM card which has been sent out as an invoice. After adding-machine tapes have been run as controls, the stubs are reproduced and enlarged into standard 80-column cards.

These payment cards are merged with the transaction cards created during the degree-day accounting process. The pairs of cards then are match-merged against a file of accounts receivable cards. Unmatched payment cards are selected out and the cause of selection is investigated.

Payments are handled similarily under our Budget Plan. We provide a book of punched card payment coupons which contains a stub IBM card for each payment. When returned, the stubs are reproduced to full size for processing in our office.

At the end of the year, we write a statement on the accounting machine if the customer owes us money, or, if he has paid too much, we either write a check to reimburse him, or we credit his next year's budget. We also obtain monthly analyses from punched cards to let us know whether or not payments are up to date. These reports are checked by the credit department each time a new delivery is due.

We feel that a major source of trouble in converting to mechanized accounting is to be found in a management which does not know what the equipment can do and thus asks too much of it. To avoid this pitfall, we briefed ourselves thoroughly on the capabilities of the new system we were about to install.

The key man in this process was our machine supervisor, whom we hired six months before a single piece of IBM equipment was delivered. During this period, he went from department to department to study the functions each group performed. He even worked in the customer inquiry department, answering every phone call he could, to see what information had to be on tap to provide satisfactory answers. When the equipment went into operation, the man in charge knew exactly how it could best be employed to help our company.

This careful approach has made itself felt throughout the Hoosier Coal and Oil organization. All of us realize today that punched-card data processing procedures have taken over details which were swamping us; as a result, our people have time to devote thought to their jobs and to do them right.

Bill Huff, Hoosier machine accounting supervisor, places cards in IBM 403 accounting machine. The unit prints delivery tickets, invoices, delivery reference lists and management reports. The company has eliminated writing nearly 14,000 statements. The IBM interpreter shown translates punched information into printed form.

A little Budget sells 'Little Bill'

Roanoke Dealers effectively promote fueloil's Benefits and do it with limited Funds

by Ralph Powers

REDUCED to its simplest terms, the problem confronting the Roanoke, Virginia, fueloil dealers was: How can we keep from being clobbered by the purse-heavy purveyors of gas and electricity?

The solution, in an even simpler phrase:

If you can't out-buy 'em, out-smart 'em!

The Roanoke Valley Oil Heat Association, born in the spring of 1959, was fathered by necessity. The previous year's statistics, as compiled by the local gas company, showed that gas accounted for the lion's share of new heating installations in the area, while even the admittedly more expensive electricity showed sharp increase.

Aware that something must be done, the local fueloilers agreed they must direct their combative efforts toward the common foes. Seventeen area dealers and distributors banded together to solve their mutual problems, and to tell the public the fueloil story as effectively as rival utilities were extolling their products.

First task confronting the RVOHA was that of collecting a "war fund" on an assessment formula fair to both large and small companies. The plan adopted was based on each member's retail sales of No. 1 and No. 2 fueloil for the previous year, providing an assessment of $1 per 10,000 gallons, with a $20 minimum (1 to 300,000 gallons) to a $500 maximum fee (5,000,000 or more gallons).

On this basis, the 17 participating members accumulated approximately $2,000. This, when combined with a matching sum contributed by the National Fueloil Council to the support of any regional organization conducting an approved local campaign, provided the Roanokers with a budget of $4,000 to conduct their 1960 operations.

For a period of several months, these operations lagged. Lack of interest was not the problem; lack of time and know-how was. The Roanoke dealers knew very well how to make and keep friends by providing swift, clean, efficient deliveries; how to service burners; replace or repair parts. But they were oil men, not advertising men. They did not know how to promote themselves, and could not find an advertising agency willing to devote the time and effort necessary to handling an account worth, at most, $600 in commissions.

It was not until January of 1960 that a solution to this impasse was found. Recently organized in Roanoke was that city's first public relations agency. This company, Nelson Bond Associates, was headed by a veteran professional writer of international reputation, author of some 500 stories and articles, seven books, creator of hundreds of network plays.

In submitting a proposal for expenditure of the $4,000, Bond viewed the situation thus:

The Problem:

. . . Within the range of a limited budget to make and keep the public informed as to the merits and comparative values of using fueloil for heating purposes; to reassure present oil heat users that they are doing the right thing; to encourage homeowners, architects and contractors to consider oilheating in new or remodeled constructions.

The Solution:

. . . To supplement a minimal but regular advertising program with a steady and consistent public relations program designed to accomplish these ends economically.

It was Bond's concept that since 17 small independent dealers could not possibly "out-buy" their rival utilities in advertising space and airtime, ingenuity must be substituted for dollars. The agency therefore planned to divert its efforts into newsworthy activities which would gain equal space and time at little or no expense.

The Association voted unanimously to give the agency men a chance to test their theories. The Bond program was approved, and activities of the agency began on February 1, 1960.

First move was to acquaint the community with the name and symbol of the newly-formed RVOHA. The National Fueloil Council had supplied artwork for the familiar "Little Bill" figure successfully promoted in other localities. In the opinion of Nelson Bond Associates this attractive little fellow had the merit of being cheerful and friendly in appearance, but was incorrectly designed from a motivational viewpoint. As Bond put it, "He is facing the wrong way. He looks back to the past, not forward to the future."

Looking Ahead

To correct this, Bond reversed "Little Bill" to face copy wherever used, and incorporated into his design the name of the Roanoke Valley Oil Heat Association, with the word "Oil" dominating.

The revamped "Little Bill" was reproduced for use in a variety of forms. Engravings were made in three sizes ranging from ½ to 1½ inches, and cuts delivered to each member of the Association for drop-in use whenever printed media were used.

Large "Little Bill" symbols were then produced on weatherproof pressure-sensitive stock for use on the members' motor vehicles. Made available in 9 and 13 inch diameters, these symbols were affixed to all RVOHA rolling stock.

"Little Bill" slides were prepared for use on television. In this, as in other media, members of the Association were urged to use the "Little Bill" symbol whenever they advertised as

individual companies, to the end that the Association might benefit from the exposure, and that each member company should derive additional prestige from affiliation with the organization.

Advertising activities included insertions in local newspapers with a modest but consistent series of small ads designed to tell one short, simple story in a pithy phrase, frequently humorous. Daily ads, rotated at random through all sections of the paper from sports page to the woman's section, reminded readers that "Oil Heat is Clean," "Oil Heat is Safe" . . . or even occasionally that, "There's No Fuel Like An Oil Fuel!"

In addition, about once a month a large institutional ad was used. Such ads were of the "soft sell" variety, the purpose being not to compel immediate sales, but to upgrade fueloil by stressing its strong points of service, safety and dependability.

"Into these hands"
Photo by Dayerle Studios
Into these hands, time-tested and experienced, you place with confidence the safety of your home, your loved ones' comfort. These are the hands of men who know their job, and pride themselves on serving you . . . quietly, swiftly, efficiently.
These are the hands of your fuel oil dealer.
As the warm days of summer near, your fuel oil dealer, thinking far ahead, suggests that now is the best time to resurvey your oil burning equipment, preparing for next winter's blustery winds. Off-season maintenance is most convenient, most economical for you. Call your own self-selected fuel oil dealer now.
OIL
Andrews-Pitzer-Butler Fuel Oil Corp.—Andrews-Trout Co.—Cluff-Smith Fuel Oil Co., Inc.—K. E. Dow—Pan Standard Oil Co.—Fuel Oil & Equipment Co., Inc.—P. L. Hatcher & Son—Paul P. Hunter—Lawson Oil Co., Inc.—Mountain Fuel, Inc.—Poff & Hall Fuel Oil & Heating, Inc.—Salem Oil Co.—Schneider Oil Co., Inc.—Service Oil Co.—A. Byron Smith Oil Co.—H. R. Turner & Son, Inc.—Vinson Fuel Co.—H. L. Wickham—The National Fueloil Council

But the foregoing is straight advertising . . . a minor part of the program as planned and carried out for the Roanoke dealers. The agency's emphasis was placed, and greatest impact obtained, from its public relations.

One of the first innovations was to establish a channel of communications with members, potential members and other exponents of fueloil use through the publication of a chatty and informative newsletter. "Little Bill's Bulletin," made its first appearance in February, and since then has been published regularly each month.

Telling Members

"Little Bill's Bulletin" is no dry and stodgy recital of events, substituting for a secretary's or treasurer's report. Nor is it a propaganda sheet, preaching the merits of oil heat above all others. In bright, frank and amusing fashion it tells its readers what others are doing, offers tips on better sales and service practices, includes personality notes and success stories, even drops a little whimsy into its columns from time to time. Its format is best indicated by its sub-title, which declares the Bulletin to contain, "Oil the News That's Fit to Print."

Copies are mailed to each member of the Association in sufficient quantity to be distributed to that company's individual employees. In addition, copies go to companies which are not, but should be, members of the Association. Copies are also sent to each architect and contractor in the area, that they may be reminded constantly that oil men are not only alert and progressive, but that they are their friends.

Another aspect of the public relations activity is the RVOHA monthly meeting. Whereas in former months the emphasis was on problems within the Association, meetings now are spearheaded by the guest appearance of an interesting speaker. In April a local architect was asked to explain why he sometimes recommended gas or electricity to his clients, and why he did not always elect to heat with oil. In May a panel of four homemakers were invited to come and discuss their attitude toward oil heat and its dealers. The fueloil men alternately beamed and writhed as bouquets and brickbats were tossed in their direction by the fair ones. But they learned to see themselves as others see them.

A continuous activity of the agency has been the placement of publicity stories in newspapers of the Roanoke area. Locally slanted rewrites of National Fueloil Council releases are regularly provided. In addition, news items on Association activities are supplied. Bond urges all members to provide the agency with news applying to any individual employee, as well as more general stories dealing with group activities of the Association itself.

So much for the publicity aspect of a public relations program. But Bond is strongly inclined toward what he calls "pure" public relations. This, by his definition, is the development of projects which offer "absolutely no prospect of immediate financial gain . . . but make you seem a nicer guy." Bond believes that, "Advertising is what you say about yourself; public relations is what others say about you," and constantly stresses the idea that projecting a friendly image of fueloil is in the long run more important than an immediate sale.

"The fueloil dealer's job as I see it," he says, "is not only to win new friends but to keep the friends he now has. We must constantly reassure present fueloil users that they are doing the right thing, because one of these days they'll be building a new home . . . and when they do so, we want them to use oil."

To this end, the agency diverts a major portion of its modest budget into activities that merely "win friends and influence people." Such projects are illustrated by a novel mailing-piece issued during the month of April. Recognizing that in this month hundreds of families move into new homes, Bond designed an attractive jumbo postcard.

Packaged in lots of 25 and banded with a "Little Bill" emblazoned wrapper, these cards were distributed to each member of the Association with instructions that the first time oil was delivered to any customer, old or new, but housed in a new location, the delivery man give a packet of these cards to the lady of the house.

Postcard Gift

The postcard itself is a "change of address" announcement which allows the user to fill in blank spaces describing the new house sedately or humorously as his mood dictates.

An even more unusual "good neighbor" activity of the RVOHA took place in July. Roanoke boasts a very popular community theatre group, The Showtimers, which presents six plays during the summer months. Showtimers' productions are frequently sellouts. The night of July 12 certainly was, for the Roanoke fueloil dealers bought out the entire house and distributed the tickets to 300 selected friends, customers and potential members of the Association. Unbusinesslike? Perhaps! But Bond believes that it is good business for the dealers to entertain their friends at a purely social function . . . particularly when this can be done at a cost less than that of buying a couple of one-minute TV spots!

Speaking of television, the mechanics of public relations were well illustrated in June when Bond arranged for the fueloil group a complete five-week series of TV shows at no cost.

Utilizing a well-established woman's program on the local CBS outlet, Bond prepared a Home Planning Clinic series, wrapped it all up in a neat bundle, and presented it to the moderator of the show. Narrated by a prominent Roanoke architect, also past president of the Roanoke Fine Arts Center, the series was given eight minutes free air time on five consecutive Thursdays.

Here was a clear case of "give four to get one," for the series did not confine itself solely to home heating problems, but ranged through such subjects as locating a home site, lighting the modern home, planning a perfect kitchen, and so forth. However, one of the programs was devoted solely to discussion of home heating . . . and in the course of the discussion, the only type of heating mentioned was fueloil.

It is still too early to estimate the value of the public relations program instigated for the Roanoke Valley Oil Heat Association. However, both agency and client are well pleased with results observed to date.

"We have achieved our short range objective already, and sooner than we had hoped," says Bond. "We find that more people are talking about us more often and more kindly . . . which was our first aim."

John J. Butler, president of the Association, adds, "This is at once the most progressive and the most interesting experiment we've ever tried. Very frankly, most of our members had heard of 'public relations' but weren't quite sure what the term meant. To find ourselves trail-blazing in our home community is exciting, and working together on some of these projects has welded our new association together tightly. I think our public relations program has done a great deal to cement our private relations, too."

Long-range objectives of the Association and its agency are to formulate new ideas for attracting the attention of the public, to tell the fueloil story even more dramatically and thoroughly, to attract new members to the RVOHA and increase its budget for 1961. But whether that budget increases or not, the Roanokers now know "Little Bill" can be sold to the public at little expense.

They have discovered that you don't buy friends . . . you earn them!

We have moved !
Our new home is
It has rooms and baths
The house is
The lot is
We have oil heat, hot and cold running
and what we like best is
OIL
Welcome to Your New Home!
We know you're too busy to write just now, so use these jumbo cards to tell your old friends your new address.
COMPLIMENTS OF YOUR Little Bill OIL DEALER
from
New address

Heat alone is not enough

Some Refinements in boiler Design contribute to a better functioning Unit

by Stanley C. Paterson*

THERE WAS A TIME a few years ago when heat alone would satisfy the customer. Since his only measure of comparison was laborious, dirty, slow heating coal, the convenience and control offered by oil was enough. Now we have had three decades of oil heat and along the way have picked up substantial competitors—gas and electric heat. Equipment and controls have improved as well. Today, therefore, a warm water heating system must perform its function of heating efficiently and quietly (that includes minimizing the expansion noise in copper fin baseboard radiators). It must supply increasing quantities of domestic hot water at all times and not cause service problems due to entrained air.

Ideally all these functions should be designed into the boiler system. Over the past few years, we have been giving a good deal of time, thought and experimentation to the solution of these problems. While we have embodied the solutions in the package boiler unit we manufacture, many of the principles we employ can be applied by the trade to conventional boiler units.

In the design of new, compact, oil-fired boiler units, engineers have many times sacrificed operating noise levels to achieve size and cost savings. In our years of experience with "Shell Head" burners, we came to the conclusion that the effective noise level of the burner was more a function of boiler design than burner design. Accordingly, in the design of our boiler particular emphasis was placed here.

In our study, we found that if we were to take the flue off the bottom of the unit instead of the top as is conventionally the case, combustion noise disappeared. Acoustically, the combustion sound becomes trapped within the boiler itself and dampens out in this design; whereas, in the conventional design, the upward flow of gas tends in many circumstances to amplify the combustion sounds.

Incidentally, it has been our experience in the last five years of utilizing this up-side down design that we are never bothered by boiler pulsation in spite of the fact that we do not employ vents to relieve combustion chamber pressure, such as found in many modern boiler units. There is also a collateral benefit to be derived from this up-side down arrangement. During the off cycle all the residual heat is trapped within the boiler instead of being drained up the chimney. This we find is increasingly important as modern control equipment has reduced the length of the running cycle of units but increased their frequency in an endeavor to produce as even a heating as possible. Field experience has shown that substantial fuel savings can be attributed to this design feature.

Noise created by thermal shock in copper baseboard radiation is annoying to the homeowner and the cause of numerous unnecessary service calls. The mechanism that causes this phenomenon is really quite simple. In the ordinary boiler design when the circulator calls for heat the hottest water (anywhere from 160 to 240° depending on the Aquastat setting) is immediately pumped from the boiler into the radiation. This hot water increases the temperature of the copper tubing suddenly. Since the thermal expansion of copper is very great (a 10 ft. length of copper baseboard will expand 3/16" from cold to hot position), the sudden movement of the pipe will cause noise. The obvious solution is to heat the radiators slowly.

A system has been marketed for a number of years which will solve this problem. In its simplest form the idea is to by-pass the boiler so that when the circulator comes on the cold water in the radiation is pumped around the boiler and back thru the radiators again. Hot boiler water is slowly mixed with the cool circulating water slowly raising its temperature. As increasingly warmer water is circulated thru the system, the radiation is slowly brought up to temperature. Expansion will then occur slowly and quietly.

Mechanically, this can be effected by placing a thermostatic valve in the supply outlet of the boiler between the boiler and the by-pass loop set for 180°. If the low limit is set for 160° the thermostat will not allow water to escape from the boiler until the burner has raised the boiler water temperature to 180°. Meanwhile, cold water is being circulated thru the system. Since the thermostatic valve is a slow opening device, hot water will be metered slowly into the circulating water and its temperature will rise slowly.

The results of this arrangement can be easily seen in Fig. 1. Curve A shows the steady temperature rise to a constant temperature of the thermostat—by-pass system. Curve B shows what happens in an ordinary system. In this you will see that the temperature rises quickly to the operating temperature. It continues at that temperature until the circulator has pumped all the initial charge of hot

This is another article highlighting refinements in oilfired equipment. In this one Mr. Paterson explains some of the improvements incorporated in his company's Constantemp boiler-burner unit. Then he points out that these same principles in general can be applied to conventional boilers.

It's likely that not every designer or installer will agree with him completely. But we publish the article—even knowing it may be controversial—to demonstrate that there is quite a lot of work under way aimed at increasing equipment efficiency.

*Waltham Oil Burner Co., East Boston 28, Mass.

water from the boiler. The temperature then falls until the burner can pick up the temperature once more.

On a conventional boiler this improved system must be applied by external piping. In the case of the boiler unit we have designed, the by-pass system is in the top of the boiler as shown in Fig. 2. The amount of water by-passed can be controlled by a damper.

In the case of old gravity hot water systems that have been converted to forced circulation or large systems where there is a large quantity of water, the thermostatic valve—by-pass system has a special advantage. In the conventional piping layout a hot water temperature control which shuts off the circulator on a fall of temperature in the boiler (reverse acting Aquastat) must be used if tankless heater operation is to be protected. This causes the water to be circulated to the house in slugs. The circulator will start, pump out hot boiler water into the system until the reverse acting control shuts off the circulator. There is a period of no circulation while the boiler temperature recovers —a short period of circulation again —and so on.

This, of course, means the first radiators get heat each cycle and the last radiators do not get heat until the system stabilizes. This generally means a serious local overheating of the house. In the case of the thermostatic valve and by-pass system—there is continuous circulation of water within the system. Even if the boiler water temperature fails to shut off the thermostatic valve, the hot water in the system will be circulated round and round through all the radiators until the boiler water temperature will allow hot water to again enter the system, and radiators heat uniformly.

A study of Fig. 2 will show a remarkable departure from customary boiler piping practice. You will note that the return is piped to the top of the boiler not the bottom as is the usual case. Did you ever stop to think why you pipe the return to the bottom of a hot water boiler? The only true answer is because of trade practice.

It is very much like the case of warm air registers. For almost 100 years, warm air systems have been designed with registers on inside walls. Yet in steam and hot water systems, radiators are always placed on outside walls to balance the heat loss. Since all early warm air systems were operated by gravity, the warm air ducts had to be as short as possible, otherwise, air would not circulate. Thus registers had to be located on inside walls, close to the furnace. Once a blower was added to the furnace this restriction on register location was lifted—however, trade practice persisted—registers were still put on inside walls.

Register Location

In a way, it is amazing that a practice which is basically wrong and which produces an inferior and unsatisfactory heating system could persist for three decades. Only in the last few years have the more alert segments of the heating trade realized their error and now design systems with registers on the outside wall where they have belonged all the time.

The situation is very much the same with hot water systems. When hot water systems were operated by gravity, the cold water from the radiation had to be returned to the bottom of the boiler. This is the only way water circulation could be achieved. With the advent of the circulating pump the trade was released from this restriction in much the same way as it was released from the restriction of inside wall registers in warm air.

Ordinarily, it does not matter where the return is located—unless you have a tankless heater in the boiler. I dare say that the great bulk of boilers installed today have tankless heaters of one sort or other. The proper functioning of a tankless is highly dependent upon having the boiler always full of hot water. Unfortunately, with cold water being returned to the bottom of the boiler, it does not take long for the circulator to pump all the hot

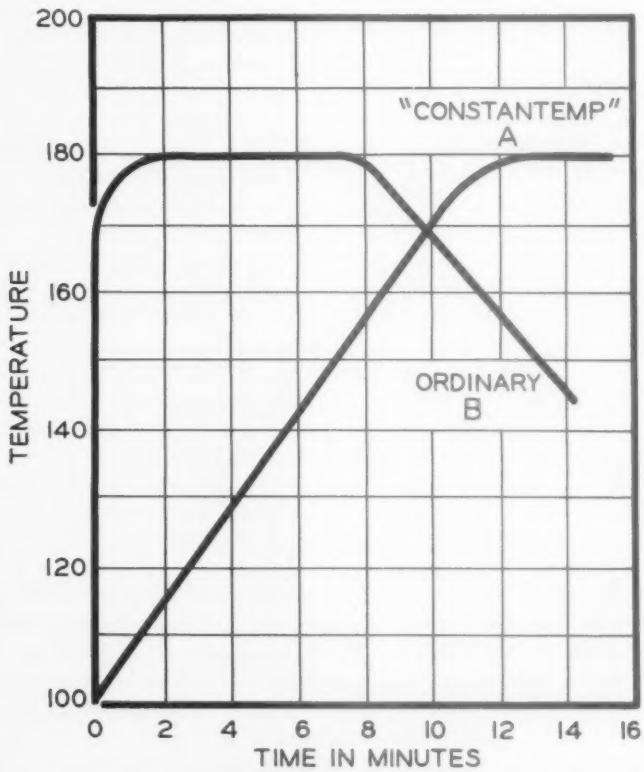


Fig. 1. The chart shows the temperature of water supplied to radiators when the system starts with cold radiators. With the "Constantemp" boiler, line "A," the initial water temperature is low. As the circulator pump operates the water temperature slowly climbs to the control temperature. With standard boilers, line "B," high temperature water is immediately pumped into the system until the supply is exhausted.

water from the boiler. If, at this time, the homeowner turns on a hot water tap; no hot water is possible.

To minimize this problem, the control industry advocates the use of a reverse-acting Aquastat. This is designed to shut off the circulator when the water temperature in the boiler is reduced by the return water. To be effective this control must be put in the lower part of the boiler. Since the cold water returning to the bottom of the boiler is heavier than the hot water in the boiler no mixing can take place, and the circulator will not be shut off by the reverse-acting Aquastat until the cold water line reaches it. If it is in the top of the boiler it will not turn off the circulator until a greater part of the boiler is full of cold water.

In the last two or three years, the control industry has made available three-purpose controls which combine the high limit, low limit, and reverse acting control in one instrument. Since the primary job of the control system is to protect the boiler from overheating, the triple control must be placed in the top of the boiler which, of course, defeats the purpose of the reverse acting control since the cold water level must reach the top of the boiler before the reverse acting control can function. Thus, the boiler can be full of cold water when the housewife turns on the hot water tap.

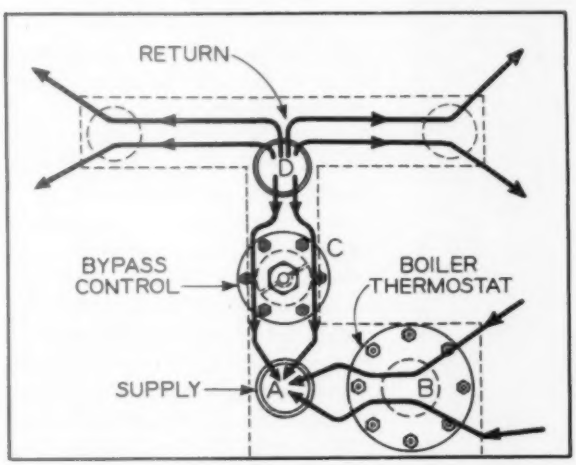
While proper placement of the controls and setting the differential closely will help, we believe that we have a far better solution to the problem. With water mechanically circulated why must the water be returned to the bottom of the boiler? What happens if we return to the top of the boiler? The return water, being denser than the boiler water, will mix with it. In actual practice, this mixing will make the temperature from top to bottom in a boiler operating on this design vary no more than 6° in any part of its operating cycle and will be completely uniform during most of the cycle. If you couple this arrangement with a reverse acting control or the thermostatic valve and by-pass system discussed above, the function of the tankless heater is always protected by a full boiler of hot water.

For our boiler design, we have chosen to use the thermostatic valve and by-pass system rather than the reverse-acting Aquastat as we get the advantage of the by-pass system discussed above.

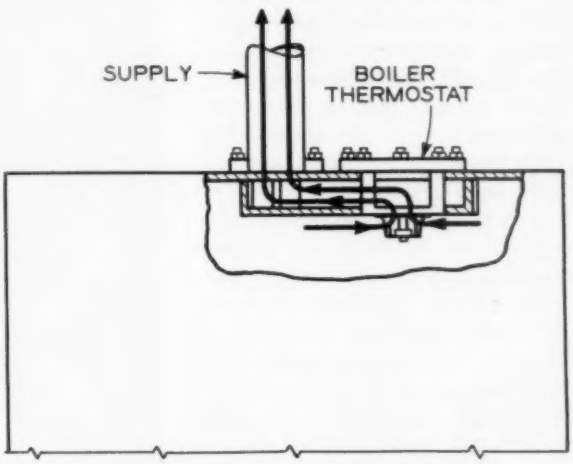
Air trapped in hot water heating systems is a cause of service calls which can be eliminated by proper system design. The University of Illinois made a study a few years ago to determine where the air came from that caused the radiation to become air bound. Their research showed that some of the air cushion in the expansion tank was absorbed by the water flowing into the expansion tank each time the boiler heated up. As the boiler cooled down in the off cycle this water was returned to the boiler laden with air. On the next cycle the new air in the boiler water was expelled from the water, since air is soluble in water inversely proportional to the temperature (the higher the water temperature the less air can remain in the water).

This air will, of course, rise to the top of the boiler and then find its way up into the radiation. At the same time, the air removed from the expansion tank by this mechanism is replaced by water. Sooner or later you get a service call to drain the expansion tank, vent the radiation, or both.

This problem can be solved easily if you take the supply water to the radiation from below the top of the boiler (in the boiler unit we have designed we have the supply and return 1-½" below the top of the boiler). This you can do with conventional boilers by using special fittings which are available on the market. Naturally, to make the system work you must connect your expansion tank to the top of the boiler so that the discharged air can return to the expansion tank. Beyond this there is an expansion tank that is currently being marketed with a rubber diaphragm separating the water and air chambers. Since the boiler water is never in contact with the air, there can be no absorption of the air by the water.



TOP VIEW OF BOILER



SIDE VIEW OF BOILER

Fig. 2. In the Waltham system the circulator pumps water from the radiators into a distributor D built into top of boiler. Part of the return water is introduced into the top of the boiler at B; the remainder is forced by the by-pass control valve C into the mixing chamber. The boiler thermostat allows controllable amounts of hot water from the boiler to enter the mixing chamber. The warm mix of boiler and return water then goes through supply A.

Year-round Balance

Brooklyn fueloil-oilheating Dealer finds cooling Installations add Profits

by William J. Stein

PAM OIL CO., INC., Brooklyn, N. Y., has been in the fueloil, oilburner and heating business for about 25 years. After World War II the demand for automatic heating was high. This, together with an interest in another business that manufactured electric components for larger contractors and the United States Government, absorbed all the time of Nat Ross, Pam Oil president.

In 1950 the volume of oilheating conversion work started to fall off. Because of its location, in the middle of a relatively built-up community, new work was not available in a sufficiently large quantity to take up the work load that this firm had normally been accustomed to. Ross stated that at this time it was virtually a necessity for him to get into the airconditioning business. He had to have something that would counteract the diminishing end of the business. This was a necessity from the point of view of maintaining the normal dollar volume and profits of this business. It was also important as a means of maintaining steady employment for the workers of this firm.

At about this time the airconditioning business was generally viewed with extreme optimism. The future seemed exceptionally bright. Ross reasoned that it was not unlike his heating installation business and that his firm could tackle this work with ease during its off-season.

Pam Oil jumped into its new project without reservation. It handled window units, three and five ton packaged units, and larger contract work. It wasn't long before Ross realized that the airconditioning business was being overplayed in the New York area. The selling of window units was soon dismissed as a bad deal. It was impossible to compete with the discount appliance stores who sold a window unit, with or without installation, and took only an insignificant mark up. Whereas, a reputable fueloil

Nat Ross, Pam Oil president, seated, discusses a job with son, Chip Ross.

dealer had to personally guarantee the equipment, the appliance store shifted its responsibility to the manufacturer's warranty without any personal obligation. Also, in this area of the city, many of the appliance stores engaged in costly advertising and high pressure sales techniques that were entirely different from the usual path of a fueloil-oilheating dealer.

It wasn't too long after this that Ross found that he could not contend with many of his competitors for the sale of three and five ton packaged units. Ross termed this work "off the street airconditioning" because almost anyone handy with tools could walk into a small store and hook up one of these independent units as a free throwing job. Competition, generally, came from three places; namely, refrigeration people, electricians, and plumbers. In many of these instances these people were self-employed individuals who did a job just for a day's wages. Unfortunately, their prices set the pattern for the competition. Thus, when some of the larger airconditioning people sought this work and, either beat or met the competition, they were eventually forced out of business because of financial loss. Ross found that if he met this competition and maintained a sales force and service department that operated effectively, he would be losing money—a bad practice in any business.

A 20-ton compressor unit airconditions the engineering offices of General Transistor Corp., Jamaica.

The one area that remained was the larger job that required greater technical skill and financial responsibility. Here Ross felt that he found a niche. The competition came from firms that were well qualified to know what they were doing.

Ross cautioned anyone interested in this business to properly evaluate the problems. Designing the larger airconditioning systems is more complicated than comparable heating work. The characteristics of effectively moving cooled air have to be understood. In airconditioning the dealer has to deal with humidity as well as temperature. In certain industrial work other factors such as lint and dust control enter the picture.

In a large urban area problems relating to labor are manifold. First, it is very difficult to find qualified men to design and sell cooling at a profit for the firm. Ross solved this problem by having his son, Chip, take over the airconditioning department. Because of this young man's personal interest and aptitude, the firm has been able to effectively cope with the business and keep it rolling at a profitable level.

According to Ross, the employee in charge of estimating and sales can either make or break this business.

Accuracy in figuring costs cannot be over emphasized. Labor as well as material costs have to be precisely determined. Sub-contracts have to be let at the lowest price commensurate with good work. Then on-the-job supervision of the work has to be close and continuous. Costly errors, made by a careless or indifferent employee of a sub-contractor, must be avoided. Such errors are not only expensive to repair, but as Ross pointed out, they can lead to costly law suits, delays in payments, and impairment of one's reputation.

A very serious source of trouble that has to be anticipated and cleared up before it occurs exists in the area of labor disputes. Jurisdictional problems arise among unions relating to the installation or handling of some of the air-conditioning equipment. The different trades involved are: 1) trucking and rigging; 2) electrical; 3) piping and steam fitting; 4) sheet metal; 5) plumbing; 6) refrigeration. When installing airconditioning in an industrial plant such disputes can affect the customer's workers. When working in a large retail establishment it can directly affect the customer's trade. The problem of specific locality has to be carefully considered. Unions that work in one area of the city may not be able to work in another area if a different local has jurisdiction.

Costly Education

With all these pitfalls, how does one remain in the business? In reply to this question Ross smiled and said, that the learning process this firm had to go through was costly to some extent. Thanks to a profitable fueloil business, the cost of learning the ins and outs of airconditioning was absorbed. Pam Oil learned by doing and was fortunate enough to eventually develop a profitable business. Last year this firm did 38 airconditioning jobs with a total dollar volume of $250,000. The business has developed to the point where 33% of the dollar volume represents a gross profit.

Ross also pointed to the leverage value of a fueloil dealer who does heating and airconditioning. Unlike the firm that only does airconditioning, the fueloil dealer is not pressed into taking work at an unprofitable figure. Whereas, a firm that does only airconditioning must continue to take work in order to keep its shop in operation. The fueloil-oilheating dealer is provided with a certain amount of flexibility. He can employ his help in other departments. Also if the airconditioning work becomes heavy, he can draw from his heating installation and oilburner service personnel. A oilheating dealer in airconditioning work has a solid business which can help him financially while he is getting started. Furthermore, he has an acquaintanceship among his fueloil customers that provide sales leads.

Ross stated that most of his airconditioning work comes from customers' referrals. On a number of occasions, Pam Oil has been called upon to do correctional work, such as fixing mistakes made by others. Ross stated that he is very proud of his firm's ability to cope with these problems.

Chip Ross added the comment that he enjoyed the airconditioning because of its constructive nature. When he left a well done job he always had a personal feeling of accomplishment.

It was easy for the writer to appreciate this feeling after he examined the airconditioning plant at the General Transistor Corporation on a very hot and humid summer day. Pam Oil's job kept the interior of this plant at a pleasant temperature and humidity level. A similar effect was obtained in a large place like Buddies restaurant. Here the airconditioning overcame the broiling afternoon sun which beat down on a flat roof. It overcame the heat from a westerly glass wall of more than 100 feet long. It overcame the heat and vapor of the steam tables and open grills.

Similar work has been done in large bakeries, milk bottling plants, ice cream factories, hotels, bowling alleys and industrial plants.

To properly service his airconditioning installations Ross has six specially schooled servicemen who, when not busy on this work, are employed in some phase of the fueloil business. Three specially equipped trucks are available for servicing only airconditioning equipment. This service is available around the clock seven days a week.

Ross emphasized several points as parting words. The importance of close personal supervision throughout all phases of the work is of primary importance. Then, he suggested that one should not take a job if one could not do it properly and make a profit commensurate with the time, money and energy spent at this work.

Stack Losses are important!

Wise Servicemen use combustion testing Instruments to minimize stack Losses

W. B. Adams

COMBUSTION TESTS are to an oilburner what miles-per-gallon tests are to an automobile. Both kinds of tests reveal fuel economy on a numerical basis.

If you were a car dealer and sold a customer a Buick, Chrysler, or Mercury, it would be good if both you and the customer knew that under favorable conditions the new car goes, say, 19 or 20 miles-per-gallon.

If you sold a homeowner an oilfired furnace or boiler, it would be equally good if you could report to your customer that, for example, only 20% of the heat in the fueloil he buys goes up the stack.

The stack loss of an oilfired boiler or furnace is the important loss. Where the equipment room is not overheated, the stack loss is the only loss. In most homes, the equipment room is not overheated. In the few homes where it is overheated, usually what's needed is simply highly effective thermal insulation for a steam or hot-water boiler.

Instruments used

To determine the stack loss is a simple matter. Using one instrument, in about two minutes you ascertain the percentage of carbon dioxide in the smoke pipe gases of the installation—you get a CO_2 reading.

Using another instrument, a stack thermometer, within a few minutes you find out the temperature of the gases in the smokepipe; that's the temperature of the gases leaving the smokepipe opening of the furnace or boiler. It's called the stack temperature.

You have to use such a stack loss table as accompanies this article, or the equivalent of such a table. You should use the table or equivalent which accompanies the set of combustion testing instruments you use. Make certain you follow the instructions which come with the table you use. (These may tell you to deduct room temperature, usually 70°F., from an actual or gross stack temperature reading, to obtain a net stack temperature, which the table lists.)

Stack Loss Table

% CO_2	% Excess Air	Stack Temperature Degrees Fahrenheit 300	400	500	600	700	800	900	1000
15	2	10.6	12.7	14.8	16.9	19.0	21.1	23.2	25.3
14	7	10.9	13.1	15.3	17.5	19.7	21.9	24.1	26.3
13	15	11.3	13.6	15.9	18.2	20.5	22.8	25.1	27.4
12	25	11.7	14.1	16.5	18.9	21.3	23.7	26.1	28.5
11	35	12.0	14.6	17.3	19.9	22.5	25.2	27.8	30.5
10	48	12.4	15.3	18.2	21.1	24.0	26.9	29.8	32.7
9	63	13.0	16.2	19.4	22.6	25.8	29.0	32.2	35.4
8	81	13.8	17.2	20.6	24.0	27.4	30.8	34.2	37.6
7	107	14.9	18.8	22.7	26.6	30.5	34.4	38.3	42.2
6	142	16.2	20.8	25.3	29.9	34.4	39.0	43.5	48.1
5	180	17.7	23.0	28.3	33.6	38.9	44.2	49.5	54.8
4	218	19.9	26.4	32.9	39.4	45.9	52.4	58.9	65.4

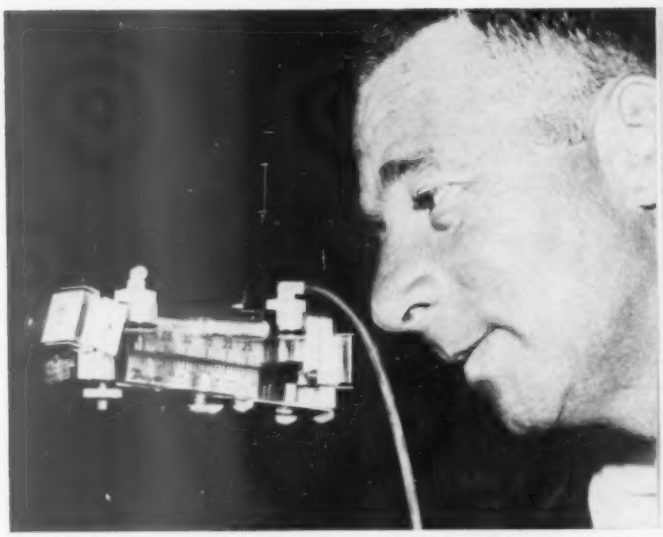
Apply a CO_2 reading and a stack temperature reading to this table, and you find out the stack loss—as the percentage of the heat in the oil that goes through the smokepipe and up the chimney. First, locate the proper CO_2 percent line in the left-hand column. Say this is 9%. Next, follow this line horizontally to the right, until you arrive at the correct, vertical, stack-temperature line. If this is 500°F. for example, the stack loss (for 9% CO_2) of 19.4% is given by the table. The second column from the left indicates percentage of excess air corresponding to the listed CO_2 readings. For 9% CO_2, there is 63% excess air; the burner is giving the flame 63% more air than is needed on a theoretical, chemical basis for complete combustion of the fueloil. Notice that the stack losses are cut only slightly by an improvement of CO_2 in the high range including 12% to 15% CO_2, but an improvement of CO_2 in the low range (4% to 8%) makes for relatively great improvement.

According to many good authorities, the lowest acceptable CO_2 reading is 8%. Average CO_2 for new installations should be about 10%. A reading of 12% represents truly excellent performance for an actual installation in a home. Many engineers have seen appreciably higher readings, of 12½% to 13½% CO_2, attained only temporarily in homes (to leave with the burners adjusted for such high CO_2 readings was unwise, as it would invite soot and smoke trouble within weeks or months). Laboratory oilburner set-ups, carefully arranged and adjusted by men attending the equipment, can at their best also give CO_2 readings in the approximate range of 12½% to 13½% CO_2 . . . if the set-ups include truly excellent oilburners operating at their best.

Stack temperature readings are so different for different equipment that entering a basement, not having seen the oilheating equipment he will test, a man hardly knows what to expect.

My way of coping with that is to say to a homeowner, whose equipment I know nothing about but which I will test, "If your stack temperature is below 700°F., you are lucky! Luckiest homeowners have down to 400°F., but they are very, very rare. Highest readings, representing intolerably poor absorption of the flame's heat by the flues of a furnace or boiler, are in the range of 900°F. to 1,000°F."

I'm talking, of course, about the actual stack thermometer reading which the owner will see on the dial of my thermometer, as he peers over my shoulder. That's the actual or "gross" reading. To get what you can call the "net" reading, the difference between the room tempera-



This draft gage, made by Dwyer, is the inclined U-tube type. As it must be level, it has a built-in bubble-type level indicator. It can stand on a horizontal surface or be used, as in the picture, with its two built-in magnets clamping it to the steel, vertical surface of a furnace or boiler jacket.

Dwyer, dial-type, stack thermometer is giving a reading of 330°F. Either the equipment has an unusually low temperature or the needle is moving up!

ture and the actual reading, you deduct room temperature (usually 70°.) from the actual reading or "gross" reading.

With the furnace or boiler fired at its rated Btu input, so that it provides its rated output, I expect an actual or gross stack temperature of 670°F. from a small unit made for low-cost homes.

To determine what their low-cost boilers and furnaces should be rated at, and what factory-recommended gph firing rates should be, some design engineers fire their units, in laboratory tests, at the gph needed to produce stack temperature readings of 670°F. (gross, room temperature 70°F.)

Lowest stack temperature readings occur on certain installations where men truly expert at firebox design and flue baffling work have done their best.

"Heat rake" metal flue baffles, which have been described in several feature articles in FUELOIL & OIL HEAT, have reduced stack temperatures of 950°F. down to 425°F. for example. Certain manufacturers of highly exceptional furnaces and boilers, of rare performance indeed, boast of stack temperatures in the vicinity of 400°F.—with firing rates that produce rated outputs.

The very lowest reading I've seen in recent years on an actual installation was 310°F. (gross or actual reading). The very highest I've seen

Fyrite CO_2 instrument, made by Bacharach Industrial Instrument Company, is available as a separate instrument or as part of a complete, four-instrument combustion testing kit. These servicemen are getting a reading of 10% CO_2.

Man at the left is obtaining a smoke reading, using Shell-Bacharach smoke-scale device that's standard for the industry. Man at the right is inserting a new slip of filter paper in the breeching of positive-displacement smoke checker.

This Bacharach draft gauge, giving a reading of minus .06" here, is dry type, gives readings through use of a large, sensitive slack diaphram. Large and of impressive appearance, its readings appear on a scale that are easily read.

was above 1,000°F., and represented overfiring of an old coal-designed boiler having just about no flue travel or indirect heating surface.

A complete combustion testing instrument kit includes: (1) a CO_2 tester, (2) a stack thermometer, (3) a draft gage, and (4) a smoke-testing instrument. Also included, of course, are complete instructions for using the test set, and for interpreting the reading. A stack loss table or equivalent is included—it may be in the form of a sliding-card device exceedingly easy and convenient to use.

The main use of the CO_2 reading and stack temperature reading have been described. Together, applied to a table, these readings reveal the percentage of heat in the oil which escapes up the chimney.

According to the accompanying table, a CO_2 reading of 11% and a stack temperature of 600°F. correspond to a stack loss of 19.9% of the heat in the oil. Of the Btu's in the oil purchased, 19.9% leave through the smokepipe and go up the chimney. The difference between this and 100% (deduct 19.9% from 100%) remains in the house and serves usefully. Because 80.1% of the heat in the oil serves usefully, we say the "absorption efficiency" of the boiler or furnace is 80.1%. That's the percentage of the heat in the oil absorbed by the boiler or furnace before the products of combustion leave it through its smokepipe connection.

The draft gage in a combustion test kit serves mainly for measuring the over-fire draft, ascertained by using a hole drilled in a flame-observation door, to make certain this draft is not insufficient or excessive.

The proper draft, according to a thumb-rule time honored because it has appeared in FUELOIL & OIL HEAT a dozen times over a period of many years, is sufficient draft to avoid the troubles of insufficient draft. The troubles of insufficient draft are oil odors, or smoke, or soot in the equipment room, and sometimes flame pulsation.

Many servicemen regularly aim for an over-fire draft reading of minus .02" water, for domestic installations fired at from .50 to about 4.0 gph. On exceptional installations, which they recognize have the ability to give no trouble with less over-fire draft, they aim for minus .01" water, or even for a "trace" of draft. A "trace" is defined as draft which is definitely negative, enough to move the needle of a draft gage toward its minus or negative position—but which is not high enough to permit obtaining a definite reading from the draft gage.

The smoke-testing instrument was developed to take guess-work out of determining whether or not a flame is producing tolerable amounts of smoke and soot. It is this important: It should be used first, before other instruments, to make certain that to start out the oil flame is clean-burning.

Equipped with a complete test kit having a metal case custom-fitted with a CO_2 indicator, a stick thermometer, a draft gauge, and a smoke-testing instrument, this serviceman uses a sliding-card computor device to ascertain the stack loss. Kit is made by F. W. Dwyer Mfg. Co.

Servicemen using a Dwyer CO_2 instrument. After they pump the flue-gas sample into the instrument, following its instructions they tilt it back-and-forth or side-to-side. They do not invert this instrument. The CO_2 reading appears in a few seconds on an easily read scale.

White-Rodgers engineer Frank Crawford, left, puts demonstration set-up through its paces for John W. Schulz, technical editor. Kwik-Sensor flame-detector, being pointed to, actually is located inside a gun tube. It is used with the Kwik-Sensor primary control, at the lower right, made now only in a continuous-ignition model for domestic burners. A model for intermittent ignition will be available.

White-Rodgers Detector responds instantly to radiant Rays from the oilburner Flame

by John W. Schulz

DEMONSTRATED recently for FUEL-OIL & OIL HEAT editors, a new White-Rodgers primary control acted electronic.

A relay connected to its Kwik-Sensor flame-detector instantly clicked to one position when the detector "saw" light, and instantly clicked to its other position when the detector was shielded from light.

The new detector is small. Its light-sensitive face is less than half an inch in diameter. It has no moving parts.

However, the Kwik-Sensor flame-detector, and the Kwik-Sensor primary control used with it, White-Rodgers emphasizes, are in no way electronic. They employ no vacuum tubes, no transistors.

The set-up just performs in the fashion of an electronic primary control.

Also making the Kwik-Sensor flame-detector seem electronic, it is selective. It responds to light, and to rays from a radiant oil flame. But it does not respond to a blue flame, to red-hot firebrick, or to an ignition spark.

The new control system is said to gain the great advantage of electronic oilburner controls—without using electronics. That advantage is instantaneous response.

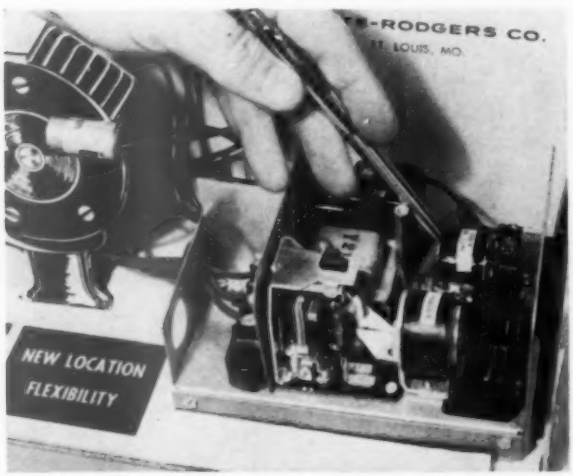
Its manufacturer explains: Unlike heat-sensing control elements, which respond only after a time interval, the Kwik-Sensor is a flame-sensitive resistor that reacts instantly to both flame light-off and flame cut-off.

It responds to radiant rays from the oil flame. Therefore it has no time-lag awaiting heat build-up or dissipation . . . whereas heat-sensing elements necessarily have time-lag. Control action that's quicker-acting and safer throughout is said to result from the instantaneous response.

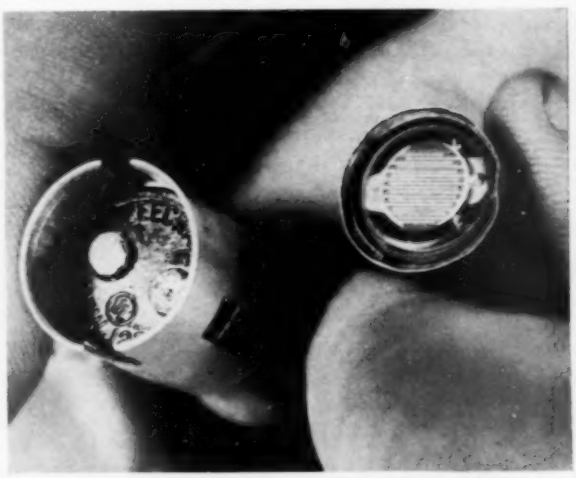
In the new primary control system, made only for domestic oilburners, the Kwik-Sensor flame-detector is part of a circuit which could not be simpler. Three components are in series, including (1) a 24-volt secondary winding of a transformer powering the circuit, (2) a solenoid coil of a "combustion relay," and (3) the Kwik-Sensor flame-detector.

Powered by 24 volts and wired in series with the relay coil, the flame-

(*Please turn to page* 106)



Left: Pencil points out the "combustion relay," action which the article describes. This takes the place, in the standard White-Rodgers primary control, of the smokepipe heat-sensitive element, its clutch, and its combustion switches. The primary control shown here can be mounted in or on an oilburner, in a furnace or boiler vestibule, or in any other convenient location. This control system is described as fail-safe throughout. The flame-detector will not permit an oilburner start-up, if the detector is responding to light or oil flame with the burner idle.



Right: Close-up of Kwik-Sensor flame-detector and of the socket into which it goes. Detector can be removed from its socket as easily as a small bayonet-base bulb.

Elements of degree-day Operation

For the Record— and for those Dealers not using It— here's how an automatic fueloil delivery System is established and operated

by Jack Pelinka*

It's commonplace today for just about all of the fueloil distributors to make deliveries based on degree-day records. Most now are doing it and have found that such a system makes their customers more satisfied, cuts down on their delivery problems and all-in-all increases the acceptance of oilheating. Some dealers with small gallonage—or newcomers—don't know how to set up or operate such a system. This article tells them how.

THE FUELOIL DISTRIBUTOR with an automatic degree-day system enjoys several advantages:

1. It is convenient for the customer because he doesn't have to keep checking the level of his fueloil tank and ordering fuel as needed.

2. The distributor can schedule deliveries to obtain maximum performance from his drivers and equipment.

3. The distributor is assured of a steady customer during the entire heating season.

4. Both distributor and customer feel secure in the knowledge that he will not run out of oil, thereby creating dissatisfaction to the customer and inconvenience to the distributor.

With all of these advantages, why don't all distributors have an automatic degree-day system? If they only realized how easily and inexpensively a system can be inaugurated, it is likely that nearly all of them would quickly organize one.

Following are the components of an automatic degree-day system and the procedure for establishing and administering it.

The only required records and equipment are:

1. A method for determining the average (or mean) temperature for each day during the heating season.

2. A degree-day log showing the day-by-day accumulation of degree-days.

3. A fueloil delivery record card for each fueloil customer.

4. An alphabetical list of all fueloil customers on the system.

Before discussing these records and equipment, let's make sure we understand the arithmetic involved in predicting when a customer will need his next delivery of fueloil. In developing the necessary information, we use three factors—degree-days, the "K" factor, and the number of gallons we wish to deliver each time.

The number of degree-days developed in a day is determined by subtracting the average day's temperature from 65. Thus if the high temperature for a day were 42 and the low were 16, the degree-days would be computed as follows:

42 plus 16 equals 58; 58 divided by 2 equals 29 (the average temperature for the day); 29 substracted from 65 is 36 (the number of degree-days for that day).

Degree-days don't tell the entire story, however, because some customers use more fueloil than others. To allow for this difference we assign each customer a "K" factor. This factor is developed by dividing the customer's previous year's fueloil purchases into the total degree-days for that year.

For example, if there were 7,500 degree-days in a given heating season and Mr. A used 1,500 gallons of fueloil, his "K" factor would be 7,500 divided by 1,500, or 5. If Mr. B used 2,300 gallons during the same heating season, his "K" factor would be 7,500 divided by 2,300, or about 3.5.

To determine the number of gallons of fueloil we wish to deliver to a given customer, we can be fairly safe in using 75% of the tank capacity. Thus we would plan to deliver about 200 gallons of fueloil to a customer with a 265-gallon tank (265 times .75 equals 200 gallons), thus

Degree-Day Log

SEPTEMBER

Date	Daily Mean Temp.	D.D. Today	Total D.D Heat	
			367	BRT FWD
1	40	25	392	
2	38	27	419	
3	46	19	438	
4	52	13	451	
5	47	18	469	
6	51	14	483	
7	53	12	495	
8	39	26	521	

*The Pure Oil Co., Chicago, Ill.

leaving a reserve of 65 gallons.

Now we have the factors to predict when Mr. A will need his next delivery of fueloil. We simply multiply his "K" factor by the size of delivery we wish to make; that tells us his degree-day interval—the number of degree-days we should wait before making the next delivery.

We said that last year there were 7,500 degree-days in Mr. A's town. He used 1,500 gallons of fueloil, and he has a 265-gallon tank. Question: How much fueloil should we deliver to him each time, and how many degree-days should elapse between deliveries?

All we do is multiply Mr. A.'s "K" factor of 5 (7,500 degree-days divided by 1,500 gallons of fueloil equals 5) by his size of delivery of 200 (265-gallon tank multiplied by 75% equals 200). Thus Mr. A should receive 200 gallons of fueloil every 1,000 degree-days this heating season ("K" factor of 5 mutiplied by size of delivery of 200 equals 1,000). This would leave him a 65 gallon reserve.

Isn't that easy? All we have to do now is discuss the records and equipment mentioned earlier in this article:

1. A method for determining the average (or mean) temperature for each day during the heating season. Usually this information appears in the local newspaper, or you can secure this information from the Weather Bureau. If you wish to determine the average temperature, you can buy a high-low thermometer.

2. A degree-day log showing the day-by-day accumulation of degree-days. This is simply a sheet showing the month, day, average temperature, number of degree-days, and accumulated degree-days for the season. A sample of such a degree-day log is shown in the table.

3. A fueloil delivery record card for each fueloil customer. This card should show the name and address of the customer, the size of his fueloil tank, the product he buys, the degree-day interval (e.g., 1,000 in the case of Mr. A), and any necessary special instructions to the driver. Also it should show the date of each delivery, the quantity delivered, the number of degree-days at time of delivery, and the degree-days at which the next delivery should be made. These cards are filed numerically according to the number of degree-days at which the next delivery should be made. Then as the accumulated degree-days in the degree-day log reach the time of next delivery, the customer's card is pulled, the delivery made and the customer invoiced.

4. An alphabetical list of fueloil customers on the system. This list should show the customer's name and address, size of fueloil tank and degree-day interval. If the customer phoned the distributor with an order before his fueloil delivery card comes up, the distributor can quickly find the delivery card and post the necessary information concerning the delivery that was made. Also the alphabetical list indirectly informs him of the customers that are not on the automatic degree-day delivery.

The automatic degree-day system is inexpensive and easy to administer. It creates well satisfied customers, permits fueloil distributors to inaugurate scheduled deliveries and avoid those discouraging holiday and midnight deliveries. Best of all, it virtually guarantees you a steady customer for the entire heating season, year after year, and is the best possible tool to enable you to be competitive with other types of automatic heat.

FUEL OIL DELIVERY RECORD CARD

MR. "A"
123 ANYWHERE ST.
YOUR TOWN, MINNESOTA

Gals. Used 1500 YEAR 1957-58 Base 5x200
(7500 DD) K FACTOR

Remarks #2

Date		Gals. Delivered	In Tank After Del'y	DD When Delivered	DD Next Delivery
7-11-58		179	-	0	1000
11-2		187		996	1996
12-4		197		2007	3007
1-2-59		210		3101	4101
2-1		201		4086	5086
3-3		207		5111	6111
4-7		217		6101	7101
5-31		236		7209	START

Date		Gals. Delivered	In Tank After Del'y	DD When Delivered	DD Next Delivery

Oil-fired snow melting

High-capacity System uses either 53 or 106 gph firing Rate; burns No. 2 Fueloil

TONS OF SNOW is a pleasant thought at this time of year, if you are in climes and environs conducive to sweltering. If you are made happy by thoughts of new and extended uses of fueloil, domestic fueloil, of grade No. 2, tons of snow can be a pleasant thought at any time of the year when you think of oilburner equipment that fires either 53 or 106 gph and is used specifically to melt the tons of snow.

To expand the use of heating oil, the Esso Research Engineering Company developed snow melting equipment which uses heating oil to provide the flame and the Btu's to melt the snow. The Thermal Research & Engineering Corp., Conshohocken, Pa., has been licensed to manufacture and market the equipment. It's suitable principally for the large areas of airports, parking lots, service stations, shopping centers, railroad yards, etc. Its manufacturer calls it the Thermal Snow Melter, and declares it is the first thoroughly practical snow melting system.

W. K. Lombard, vice-president and sales manager, reports that to date five installations of the Thermal Snow Melter have been made. Four of these are at Marine Air Terminal, LaGuardia Airport, N. Y.; Eidams Parking Lot, Lawrence, Mass.; American National Bank, St. Paul, Minn; and A. O. Smith Mfg. Co., Milwaukee, Wis. The fifth installation was made by Turnegain Electric Co., a contractor, and is in Anchorage, Alaska.

The LaGuardia Airport installation, regarded as a test installation, is about one mile from LaGuardia's main terminal, and was completed during the past winter.

Operated several times during the latter months of last winter, this LaGuardia installation was really put to an extreme test during the snow storm of March 3 and 4, 1960, according to Lombard. Fourteen inches of snow fell in 16 hours, giving the Thermal Snow Melter an unusual opportunity to prove itself—and it is reported to have kept up with the snowfall easily. A bulldozer, which worked at pushing snow toward and into the snow melter's melting pit, could not move snow quite as fast as the oilfired equipment could melt it. The unit melted 185 cubic yards of snow per hour.

The melting pit into which the snow is pushed, on this LaGuardia Airport installation, is the standard size pit of a 25 ton-per-hour installation; it is 7½ ft. wide, and 12 ft. long, and has a depth of 6 ft. A 6" drain-off pipe, or overflow pipe, is three feet below ground level—causing a three-feet depth of water to accumulate in the melting pit.

The accessory package on this trailer-mounted installation includes a blower, an oil pump, a control panel, and a 275 gal. oil storage tank. It takes up an eight-foot by eight-foot space. The manufacturer explains that if a buried oil storage tank were used, a space of four-foot by four-foot would suffice instead. Or, the equipment of the accessory package could be located entirely beneath grade.

Heat is given in wholesale amounts to this standard size snow-melting pit by what Thermal Research and Engineering Corporation calls its No. 10036 oilburner. At the LaGuardia Airport installation, this oilburner uses JP-1 jet fuel, and fires 55 gallons of oil per hour. The burner is equally suitable for No. 2 fueloil.

Compact Installation

Lombard declares emphatically that no other oilburner can release the amount of heat produced on such an installation (fully 7,400,000 Btu per hour) in such a small space—and thus make for such a compact and efficient installation.

He puts great stress on these additional facts. First, the fuel is used at an overall efficiency greater than 95%. Second, the water in the snow-melting pit does not boil, but during operation of the pit is kept at a temperature of about 45°F. Third, turbulence from the submerged exhaust burning is 100% responsible for accomplishing the high-capacity melting process.

The engineers of the Thermal Research & Engineering Corp. explain, "The inherent faster burning characteristic of a vapor as compared to a liquid is the key to the unusually high heat-release rates obtained in the Thermal oilburner.

"Heat for fuel vaporization is taken from the combustion chamber

Snow Melting Equipment
FACTS AND FIGURES

	Equipment for 25 Tons per Hour	*Equipment for 50 Tons per Hour*
Snow Melting Capacity		
Equivalent to	185 cu. yds. per hr.	370 cu. yds. per hr.
Each hour will melt snowfall of	one inch, over 100,000 sq. ft.	two inch, over 100,000 sq. ft.
or	two inch, over 50,000 sq. ft.	four inch, over 50,000 sq. ft.
or	four inch, over 25,000 sq. ft.	six inch, over 33,000 sq. ft.
Fuel & Power		
No. 2 fueloil, gph.	53	106
JP-1 jet fuel	55	110
Electric horsepower	30.75	61.5
Gallons-per-minute, Water drained off	100	200

Controls supplied: Flame-failure safeguard; Automatic fuel shut-off; Low-fire start proving switch; Remote spark ignition; Modulating control is optional.

of the burner through suction action created by a venturi throat. Flame holding or flame stabilization is performed by a simple shoulder type flame-holder so that combustion is substantially completed within the oilburner itself. The flame length usually is less than ten inches. The heat release is usually over 10,000,000 Btu per hour per cubic foot of combustion space."

Although these words do not give a complete idea of this unusual oilburner, they prove it to be in a class by itself—or at least nearly so—with respect to ability to produce combustion at a tremendously high rate in limited combustion space.

Combustion Method

Fueloil is sprayed into one of these burners by pump pressure, is heated sufficiently within the burner itself to vaporize fully the oil droplets, so that the fuel is a vapor when burned.

These oilburners are for distillate fueloils, and are made in ten standard models. Normal rating of the smallest is 250,000 Btu per hour, and of the largest is 12,000,000 Btu per hour. A turn-down ratio of four-to-one is standard for each burner size, based on obtaining normal output with the burner receiving combustion air under pressure of 16 ounces (equal to 27.7″ water column).

The Thermal Snow Melter consists of a small pit and a submerged combustion oilburner. Snow is plowed into the pit, where it is quickly melted. The resultant water escapes through a 6″ overflow pipe, then drains to nearby sewers or other drainage facilities.

Speed is the essence. The snow is melted almost instantaneously upon contact with the turbulent water in the pit. As the accompanying table shows, two models are made, for up to 25 and 50 tons of snow per hour.

Using the smaller model, for example, an eight-inch snow accumulation on a 100-car parking lot was removed in just four hours, and this represents a job that would have taken at least ten hours using conventional piling and trucking methods.

Installations can be arranged in any of several ways. For an area of moderate size, one pit usually is sufficient, and it may be fired by an oilburner arrangement permanently installed in it. For a large area, several pits may be used. One Thermal Snow Melter, mounted on a trailer (see the accompanying photograph), can be moved from one pit to another as the snow-melting operations proceed.

Lombard sums things up this way, "The important selling point for this equipment lies in its disposing of snow at a cost lower than the cost of trucking the snow away.

"Our system melts the snow in a pit, which can be in a corner or out-of-the-way area of a large parking area, for example. The snow is plowed into the pit—it is melted as fast as it can be plowed.

"Cost studies have been made of this approach to snow melting as compared with trucking snow away. In general, the cost of the melting is about one-half the cost of the trucking. There are exceptional cases, but on the average the melting comes out greatly favorable on an economic basis.

"Men studying snow disposal problems should be informed on other approaches to these problems. A pit can be equipped with snow melting steam coils, for example, but the cost is about five times that of the direct fired approach. Coils in the pavement, to heat it and melt falling snow, can be used. But the initial investment may be prohibitively large for big parking lots and air fields."

From sales literature come these pertinent words: "Twenty-five tons of snow can be disposed of for less than $10 worth of fuel and power. Compared with usual trucking methods, this can be a saving of more than $50 per 25 tons of snow."

The initial cost of such a snow-melting installation represents a considerable investment — equipment powered by oilburners which fire 53 gph or 106 gph is far from the cost-wise realm of domestic oilheating, for example. However, great yearly returns in the forms of dividends can be expected only of great investments.

Photo from The Port of New York Authority

A snow-melting system using No. 2 fueloil can include a pit in which the snow is melted, a bulldozer or tractor to push the snow into the pit, and an oilfired Thermal Snow Melter permanently installed in the pit—or, as this photograph shows, mounted on a trailer so that it can be used for several melting pits. When in use, the firing tube extending to the left of the trailer, in the photograph, is in the vertical position. Its open end, at the bottom of the firing tube, is 18″ below the surface of the water in the pit. When in use, the pit (six feet deep) contains three feet of water. After being used, it is drained by opening a valve at its bottom. Combustion air goes to the firing tube through the large, flexible corrugated tube which can be seen in the photograph. The oilburner uses combustion air under pressure of 16 ounces, and all of the products of combustion leave the bottom of the firing tube at a location 18″ below the surface of the water in the pit. Related to this, a 30 hp motor drives the combustion-air blower of the burner capable of firing 53 gph, and of melting 25 tons of snow per hour.

Public Relations check List

Good common Sense enables a fueloil Dealer to build his company's Reputation

by Paul Lockwood

SOME FUELOIL DEALERS think of public relations in much the same way they do of their fire station . . . to be called when there is an emergency. Public relations—good public relations—is preventative medicine . . . not the doctor or the undertaker.

What is public relations?

Even today public relations is a mystery to many businessmen. Some, for instance, consider it a high science. Others think of it as printed publicity. Actually, public relations is just good common business sense in the way a fueloil dealer conducts his business with the public. The things you and your employees do molds public opinion—good or bad—about your business.

You cannot go out and buy a gallon or a barrel of public relations. It is not for sale. You and your organization must create it. You must plan it. And, you must work on it to make it a success.

Here is a check list of the elements that go into making a successful public relations program for a fueloil dealer. Check each of the points listed that you can honestly answer with an unqualified "yes." Then, add up your check marks, multiply by two, and you will have your score for your present public relations. The unchecked questions will point the way to developing a more successful public relations program for your business.

Public Relations check List

Civic Responsibility

—Do you belong to organizations in your community in each of these classifications—church, lodge, service club?

—Do you take an active part in at least one of these organizations of which you are a member?

—Are you a strong supporter of programs designed for the civic betterment of your community even though there is no personal gain involved?

—Do you participate in the recognized worthy charity drives in your community?

—Do you contribute your business know-how, facilities, and time to make every civic enterprise a success?

Personnel Relations

—Does your salary and employee benefit program compare favorably with other employers' plans in your community?

—Do you take a genuine and a sincere interest in your employees and in their problems?

—When it is necessary to discharge or layoff an employee, do you explain the situation completely to the worker?

—Do most of your advancements to better positions in your organization come from within?

—Do you keep all of your employees informed about the goals, problems, and position of your fueloil business all the time?

Business Correspondence

—Do you answer all letters you receive as promptly as possible?

—Do your business letters have a pleasant, friendly tone that gives a true impression of your business?

—Do you personalize your letters so that the person receiving the letter does not feel "you say that to everyone"?

—Is there anything in your letters that might have a different meaning than the one you intended?

—Does the physical appearance of your letters create the kind of impression you want people to have of your fueloil business?

Telephone Technique

—When answering the telephone, do you have a "smile" in your voice?

—Do you introduce yourself and give your firm identification when answering the telephone?

—Do you make it a point to get your caller's name when you start talking on the telephone?

—Do you personalize your telephone conversation by using the caller's name while talking?

—Do you always answer your telephone calls as promptly as possible?

Advertising Attitude

—Do all of your advertisements fit into the character you want to create for your business?

—Are your advertisements prepared in good taste to give people a feeling of confidence in your fueloil company?

—Do you avoid the tendency to knock your competition in your advertising?

—Do all of your advertisements have some means of identification for your fueloil business?

—Do you avoid any misleading or semi-true advertising that will be a business boomerang?

Printed Publicity

—Do you know the publisher or editor of your local newspaper personally?

—Do you keep your newspaper informed of any personal or business activity that is newsworthy?

—Do you avoid the tendency to be a "publicity grabber" for any little thing that happens?

—Do you refrain from complaining about the amount of publicity you receive in comparison with other businessmen?

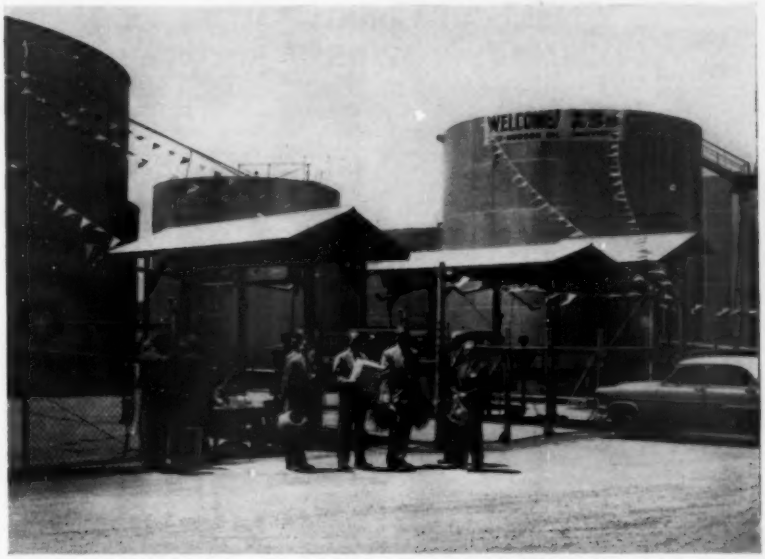
—Do you give the common place publicity about your firm a different twist to make it more interesting?

Handling Complaints

—Do you handle all complaints and adjustments promptly?

(*Please turn to page* 108)

Mid-Hudson Oil's Open House celebrates 25th Anniversary



IN MARCH, 1935, the Mid-Hudson Oil Co., Inc., Poughkeepsie, N. Y., was organized to engage in the marketing and distributing of petroleum products.

On June 8, 9, 10 and 11 Mid-Hudson held an open house to celebrate its 25th Anniversary and to mark the growth of the company to the point where now its services 4,600 consumer accounts and eleven fuel-oil dealer accounts supplied out of storage facilities totalling 18 million gallons. The facilities include a cargo terminal capable of receiving super tankers. Annual sales total well over $3 million.

Founder-President Richmond F. Meyer sent out printed invitations to each of the accounts; individual personal letters of invitation were sent to industrial, commercial and political leaders, as well as the local service clubs.

Special invitations were extended to Mid-Hudson's suppliers, oil dealers, cooperating heating contractors and even competitors. Each invitation included a key to the "Treasure Chest." In addition newspaper advertisements and radio announcements invited the general public.

Each employee played a part in the program. Guests were conducted in small groups through the office and plant with each specific operation explained by the employees responsible for its execution. Every aspect of the company's operation was explained to the groups.

Added features were 20 x 20 display tents, one containing oilheating equipment and another for refreshments and the "Treasure Chest." This contained numbered ping pong balls, with the lucky guest able to select the number of his choice if his key opened the chest. Then he was awarded a prize with the corresponding number, ranging from portable hand mixers to a table transistor radio. Of the 2,200 people who visited Mid-Hudson's Open House, 91 had lucky keys.

First day of the celebration was "Dealer appreciation Day," during which Mid-Hudson played host to its eleven fueloil dealers. Dealers and their wives were entertained at a dinner party. All-comers were welcomed on the next three days, a total of 2,219 spread over Thursday, Friday and Saturday.

Visitors showed keen interest during this close-up look at Mid-Hudson's activities; gay streamers and a large "Welcome" banner added to the festive air.

Program for the Open House was developed cooperatively by company officers and by Kirk Shivell of the Shivell-Hall advertising agency.

Oakland County, Mich.
OILHEATING MARKET REPORT

OAKLAND COUNTY, Mich., is the third oilheating market rimming the metropolitan area of Detroit to be studied in an Initial Market Analysis. Macomb County, to the north, already has an active promotional program in operation; the Plymouth area (Wayne County), to the west made an early start toward developing a campaign.

Oakland County covers a rectangular land area of 877 square miles. In 1950 its population was 396,001, which has grown rapidly, to a 1958 estimated population of 643,000. The area is largely residential, with normal retailing and commercial activities, but there is little manufacturing—outside of Pontiac City itself—and very little wholesaling. Average per-family income is high, at $7,700.

The census, for 1950, listed a total of 118,769 dwelling units in the county, of which 111,334, or nearly 94%, were of the one-and-two-family variety. By 1958, housing had increased to 182,000 dwelling units, of which 93%, or 169,260, were one-and-two-family homes, and 7%, or 12,740, were multi-unit (apartment) structures.

Home heating Characteristics

In 1945, from our earliest record of heating usage (fueloil ration permits) there were 7,634 central heating installations using oil, and 9,417 non-central, or space heating applications. The situation, in 1950, and estimated as prevailing in 1958 is shown in the following table:

	1950	
	Central Heating	*Non Central Heating*
Coal	40,600	7,290
Gas	9,375	1,845
Oil	25,320	18,715
Other	1,900	2,225
Total	77,195	30,075

	1958	
	Central Heating	*Non Central Heating*
Coal	14,969	2,236
Gas	39,917	7,452
Oil	64,241	24,219
Other	5,613	3,353
Total	124,740	37,260

Coal usage has decreased by about 64%. In the case of gas, growth has been limited by restrictions on installations. No. 2 fueloil, it is estimated, is also used for heating in some 5,000 small apartments, commercial and service buildings, bringing the total of central heating installations using No. 2 fueloil to 69,241.

Competitive Fuels and Costs

Natural gas is supplied in a substantial portion of the county by the Consumers Power Company. This fuel has been available since about 1950. Under the typical "step-down" rate, the cost, for quantities over 10,000 cubic feet per month, gets down to 7.6¢ per hundred cubic feet. For a typical househeating requirement, however — the equivalent in heat value of 1,200 gallons of No. 2 fueloil—the cost (allowing 25 therms per month for cooking and water heating) averages higher, or 9.5¢ per therm, or hundred cubic feet. This, compared to last heating season's fueloil prices, is about 14% under oilheat—not too disadvantageous a comparison, especially in view of gas supply restrictions in the past.

Prices for No. 2 fueloil through the county vary slightly, due to differences in transportation costs, but averaged around 15.6¢ per gallon at the time of this study. The per therm cost works out, from this price, to 11¢.

Fueloil Distribution and dealer Operations

From our estimates, the total volume of No. 2 fueloil sold in the county is around 90 million gallons. This is slightly higher than estimated by most dealers and supplier representatives. In addition, there are another 22 million gallons of No. 1 or kerosene sold.

The supply of heating oil is brought into the market by two types of wholesalers—major oil companies and independent refiners. The major refiners account for approximately 80% of this wholesale volume, the independents the balance of 20%.

In retail, direct-to-the-consumer distribution, the major companies again control the principal share of volume, doing about half of all the tank wagon business on a direct basis, or through commission agent operation. Some 10%, approximately, of the total retail gallonage is sold direct by the independent refiners, while independent distributors handle the other 40%.

Dealer operations, on the whole, are fairly high level from an efficiency standpoint, and most companies are enjoying comfortable operating returns. Few fueloil distributors, however, render service or sell equipment. Not 5% of the companies selling fueloil extend these facilities to their customers, the principal responsibility here being left to the plumbing and heating dealers. The weakness of this position is becoming recognized though, and at least one large company is known to be planning to add servicing of equipment. Very probably the trend in this direction will grow strongly within the next few years.

Automatic deliveries are the rule. About 65% of home delivery drops are on a keep-filled basis, and interest in quick-fill systems is increasing. The use of audible-type fill signals extends to about a third of all customers' tanks. In the pattern typical of midwestern operations, better than 50% of the fueloil distributors also sell gasoline.

Organization And Promotion

Prior to the extension of financial assistance under NFC to local promotional programs, there were two separate fueloil organizations representing the marketing industry. The first, the Pontiac Lumber, Fuel and Builders Supply Exchange, operated out of that city, and included in its membership dealers from 20 northern townships of the county. Fueloil distributors in the five southern townships were represented by the Oakland Fuel Oil Dealers Association. Differences in operations had served for some time to keep the two groups apart.

With the advent of the National Fueloil Council, however, a merger of the two associations was indicated so that a unified promotional approach might be undertaken. After considerable negotiation, a county-wide organization was formed, to operate under the name of the Oakland Oil Heat Council, with headquarters in Pontiac. A nine-man board of directors, from which the principal officers are elected, formulates policy, and the offices of the Lumber, Fuel and Builders Supply Exchange serve the new association. James R. Stelt, executive director of the Pontiac Exchange organization, is secretary of the new Oil Heat Council.

The advertising firm of Cunningham & Walsh, of Detroit, has been chosen to counsel the group's promotional effort. This is the same agency serving the Macomb County industry group. Walter Briggs is account executive.

Gas heat promotion in the area is of formidable proportions. One estimate places 1958 expenditures of Consumers Power Company at $500,000, spread over the utility's territory around Detroit. In 1959, limited, no doubt, by continuing restrictions on gas heat installation, the budget was estimated at $475,000. On the other hand, new gas supplies, arranged for by the utility, are in the offing, so increased competitive pressure may be expected.

Thus, through the services of a single advertising agency and industry cooperation, a tie-in with the neighboring Macomb County program will be sought, to gain the maximum impact possible from a consolidated approach. As other counties—Wayne, Saginaw, Midland, Bay, and, perhaps eventually, metropolitan Detroit—become activated, the total effect may present a real promotional defense for oil heat against gas heat merchandising campaigns.

Copyright, National Fueloil Council, 424 Madison Ave., New York 7, N. Y.

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Department of Commerce issues furnace Standard

A NEW EDITION of the Commercial Standard for warm air furnaces, designated Warm-Air Furnace Burner Units Equipped with Pressure-Atomizing or Rotary Type Oil Burners, CS195-60 is now available, according to the Commodity Standards Division, Office of Technical Services, U. S. Dept. of Commerce.

The revised standard covers both gravity and forced-air furnaces, marketed by the manufacturer as furnace-burner units and having specified input ratings of 560,000 Btu per hour or less. Copies may be purchased from Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., price 15¢.

Four Factors govern yearly fuel Bills

Plans for a large Building, a School, apartment House or Factory, determine what the yearly fuel Bills will be

by Jean L. Dupuis

THE FUEL FOR A LARGE building could be selected after the planning of the building had been 99% completed—according to practices of bygone years. After plans for a giant-size new school building had been just about completed for example, a decision could be made to have the new school's boilers fired by oil, coal, or gas.

The thinking of bygone years was that economical heating of such a giant-size school, being planned, depended on just one factor—on selection of a fuel inherently economical. The old thinking was that low yearly fuel bills for a new school depended mainly or only on using fuel that provided many Btu's, much heat, per dollar spent on the fuel.

The men of the electric-heat industry can be thanked (if men of the fueloil and oil heat industry want to thank these men for anything) for pointing out forcefully the error of the old line of thinking about yearly heating costs or fuel costs.

The old way of thinking is wrong. Yearly fuel bills and yearly heating costs do not depend solely or mainly on the use of a fuel inherently economical.

Electric-heat advocates are winning in a fashion almost unbelievable, considering the high cost of the Btu's in electricity, in the field of heating large buildings. Electric heat is being used in an amazing number of new schools.

The electric-heat salesmen wisely departed from the old line of thinking that any large building, a school for example, could be planned almost completely before the decision was made to heat it in a certain way. These salsemen did not make the old error of considering a building fully planned, then calculating the yearly cost of heating it by oil, coal, or gas—or by electricity.

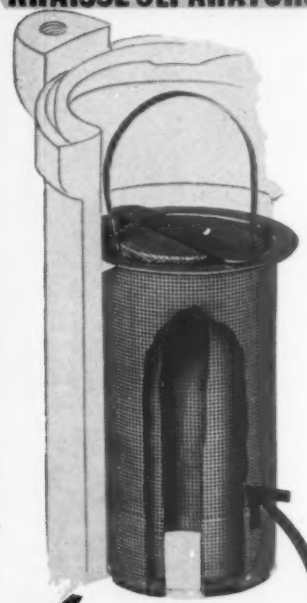
The electric-heat men study the plans of a new school that can be

Commercial & Industrial Oilburning Section

fueloil & oilheat

KRAISSL SEPARATORS

Another reason why you need KRAISSL SEPARATORS



INCREASED STRAINING AREA

Kraissl's new double element baskets provide greater straining capacity — without prohibitive increase in total space or in cost for larger units. For example — in a 1½" size, the open screen area is increased from 18.2 sq. in. to 27.6 sq. in. — with 1/16" hole dia. — by substituting double element basket for the standard single element basket.

Both single and double element baskets are listed by Underwriters Laboratories, Inc. for most commonly used sizes.

Kraissl double element baskets are interchangeable with standard baskets.

For single separators, write for Bulletin A-1882; for duplex separators, write for Bulletins A-1430, A-1431, A-1214 and A-1879.

KRAISSL CO. Inc.

295 Williams Ave., Hackensack, N. J.

heated, as an example, by using $10,000 worth of oil a year. They know that heating the school, as it's been planned, by electricity would require some $60,000 worth of kilowatt-hours per heating season.

Cleverly, these men request that a school of the same size, but different construction, be considered—a school building suitable for electric heat in that it is thermal insulated to the hilt. This has "6-4-2" thermal insulation, double glazing for all windows, all the weatherproofing and weatherstripping around windows and doors that will gain anything, and ventilation that's absolutely the passable minimum.

The new school planned by these electric-heat advocates, it turns out, can be heated yearly by only $20,000 worth of electricity!

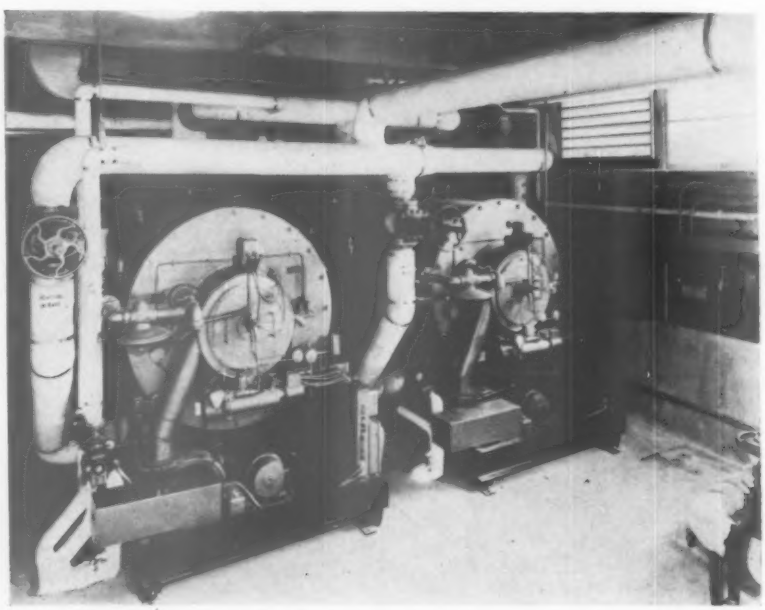
These electric-heat men are smart in not pointing out that the Btu's in electricity cost six times as much as the Btu's in fueloil, and therefore that the school building planned originally would have yearly electric-heat costs of $60,000 compared to yearly fueloil costs of $10,000. They don't point out that their fully heat-insulated school has one-third the heat loss of the original school, hence would need only one-third the gallons of fueloil to heat it yearly. Uninsulated, as originally planned, it would need $10,000 worth of fueloil

COMMERCIAL & INDUSTRIAL oilburning

yearly—but insulated in the electric-heat way that reduces its Btu heat losses to one-third of what they were, the school would need only $3,333 worth of fueloil a year.

Having arrived in their own way (the way favorable to electric heat, not oil heat) at yearly fuel costs of $20,000 for electric heat (school insulated) and $10,000 for fueloil (school uninsulated), the electric-heat men emphasize that electric heat is worth an extra $10,000 a year. For one thing, they say, using electricity results in the school's heating equipment costing $50,000 less than it would cost if oil heat were used. They cite alleged advantages of electric heat over oil heat.

All the preceding figures are approximate and by way of examples. However, they roughly fit many actual circumstances with respect to the ratios and percentages involved. The Btu's in electricty used at 100% efficiency cost, in many localities, about six times as much as the available Btu's in fueloil of the grades used to heat large schools.



New! Proven! Approved! National Airoil Type C-45 PACKAGE Oil Burner

Pressure Atomizing Burner specially engineered and approved by Underwriters' Laboratories for use with Nos. 4 and 5 commercial fuel oils

QUIET HEATING AT LOWEST COST IN BUILDINGS REQUIRING UP TO 12,000 SQUARE FEET OF RADIATION

RUGGED DESIGN AND PRECISION CONSTRUCTION

EASY TO INSTALL—MINIMUM INSTALLATION COSTS

EASY STARTING, HIGH TEMPERATURE FLAME, GOOD COMBUSTION

SPECIALLY DESIGNED FOR USE IN STANDARD FIRE BOX BOILERS OR IN THE LATEST TYPE SELF-CONTAINED BOILERS FOR NATURAL OR INDUCED DRAFT OR "PRESSURIZED"

EXCELLENT REPLACEMENT FOR LIGHT OIL BURNERS UP TO 33 GPH

UNIT CAN BE INSTALLED TO USE LIGHT OIL WITHOUT PLACING ELECTRIC OIL HEATER IN SERVICE

CHANGE CAN BE MADE TO NO. 4 OR 5 OIL AT ANY TIME

CHECK THESE ADVANTAGES

- No float valves to stick open or closed.
- No oil level to maintain.
- No air compressor or multipistons to lubricate, maintain or replace.
- Simple standard parts.
- A unit that is easily understood and serviced by any good oil burner mechanic.
- As easy to install and service as a residential gun type oil burner.
- All controls, except limit switch and thermostat, are mounted in enclosed control cabinet, factory wired and tested, with terminal block coded for easy field connections.
- All air needed for combustion is furnished by burner blower—no secondary air openings are required.
- Prepurge of cold oil and delivery of hot oil, of proper viscosity, right at the nozzle, before burner start. This insures easy, smooth start every time.
- All valves and component parts are included.
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FUEL OIL PREHEATERS are vital to the start-up and operating efficiencies of modern boilers. Cleaver-Brooks Company of Milwaukee, Wisconsin, originator and largest producer of packaged boilers, uses General heaters as standard equipment. This choice, by a company which stresses operating economies, efficiency and compactness is a tribute to the engineering and manufacturing know-how that go into General Fuel Oil Preheaters.

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GENERAL FITTINGS COMPANY

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COMMERCIAL & INDUSTRIAL oilburning

In dealing with actual instances, fueloil men and oilheat engineers must, of course, figure in terms of the actual, local costs of both the electricity and the fueloil.

You can use a device to emphasize the high cost of electricity for heating compared to fueloil . . . where, for example, the Btu's in electricity cost six times as much as the available Btu's in fueloil. Simply point out that heating 1,000 gallons of water costs six times as much using electricity as using fueloil. Point out that heating 100,000 cubic feet of air per minute, brought in from outside to ventilate a gymnasium or auditorium, costs a certain amount per hour using fueloil—but costs six times as much using electricity.

Using that device, which is 100% fair and truthful and accurate, clears away the deception involved in comparing yearly heating costs of a highly insulated school heated electrically . . . with the yearly heating costs of an uninsulated school that's heated by oil.

The electric-heat basis of "6-4-2" thermal insulation was mentioned earlier. That's actual thickness of six inches of rock wool or glass wool or similar highly effective insulation "overhead," above a ceiling with unheated space above it; it's four inches (but nominal, actually 3⅝") insulation in the air space of outside walls, between two-by-fours of frame construction, for example; and it's two inches of insulation around a slab set on earth.

As has been said before in instances involving electric heat versus oil heat for schools, you can't make a fair comparison of a school highly insulated and heated electrically, with a school insulated not-at-all or only in an ordinary fashion and heated by oil—as that would be similar to comparing the price of apples with the price of grapes.

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SAFETY AIRFLOW AND PRESSURE SWITCHES

World Leader for Dependability

"D" Series Switch shuts off fuel if drop in fluid or gas pressure occurs.

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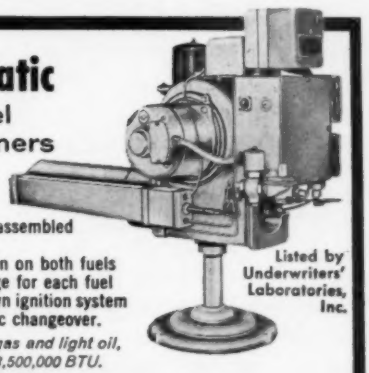
FGO *Six models for gas and light oil, in capacities to 3,500,000 BTU.*



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A job of educating people is what you've got on your hands, if your project is to wind up with the proper people making fair comparisons of the yearly costs of heating large buildings using oil, coal, gas, or electricity. That applies to figuring heating costs of schools, apartment houses, factories, institutions, and other large buildings.

Four factors govern the yearly fuel bills, and yearly heating expenses, of any building which is being planned.

First, and highly important because it represents the amount of work the heating plant must do, comes the Btu heat loss of the building. Cut this in half by the application of such things as highly effective thermal insulation, double glass, and weatherstripping, for example, and you cut in half the yearly fuel cost. Highly important also, you cut in half the capacity of the heating equipment needed for the building. Thermal insulation as good as the "6-4-2" basis provides, or almost as good, should be considered for a new building to be oilheated. Certainly, a full fill of insulation for the 3⅜" space between two-by-fours should be considered, with frame construction which provides such a space; the gain is sufficiently great to justify the extra, small cost of insulating material, and the labor cost of installing the insulation is the same as results from the installation of only a usual thickness of insulation.

The second factor influencing the yearly heating cost is the selection of a fuel, or fuel substitute, which provides economical heat . . . which provides relatively many, available Btu's per dollar spent on the fuel . . . or for each one cent spent on the fuel.

Only simple arithmetic is needed to arrive at meaningful figures related to this. If No. 6 oil (152,000 Btu per gallon) is used at 80% efficiency and costs 6¢ per gallon, it provides 20,267 usable or available Btu for each cent spent on the oil. That answer comes of multiplying 152,000 by 80% and dividing by six cents.

One kilowatt-hour provides, 3,413 Btu, and usually electricity is used for heating with the efficiency 100%. If the electricity costs 1½¢ per kilowatt-hour, it provides 2,275 Btu for each cent spent on it.

On the above basis, incidentally, heat from electricity costs nine times as much as heat from fueloil. Each

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Send for detailed information which gives all the comparative facts on why you should use HEAT-TROL. You'll be glad you did!

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useful or available Btu provided by electricity costs nine times as much as each useful or available Btu provided by fueloil.

If the heat in a substitute for fueloil costs twice as much on an available Btu basis as the heat provided by fueloil, the cost of heating a specific building with the substitute for oil will be twice the cost of oilheating the building. If substitute Btu's cost nine times what fueloil Btu's cost, use of the substitute will run up a "fuel bill" nine times the size of the oil bill needed to carry the certain Btu per hour heating load.

The third factor governing the yearly fuel bill of a large building is the efficiency of the heating equipment. Using burnable fuels, oil, coal, or gas, the heat in the fuel must be released by proper combustion (indicated by a high CO_2 reading and a low smoke reading), and the released heat must be transferred efficiently to the steam, hot water, or warm air sent around the building to heat it. As the third item, the equipment must be capable of efficient operation.

Included in the equipment must be modern heating controls and other controls which permit efficient and economical operation of the heating system. Zone controls or individual room-temperature controls can be so important as to be necessary to permit efficient operation.

The fourth factor having to do with minimum yearly fuel bills has to do with actual operation of the heating equipment. The heating plant must be adjusted and maintained so that its highest potential efficiency actually is realized. The efficiency of the equipment must not droop, because of poor adjustments or deterioration, as the years go by . . . if yearly fuel bills are to remain minimum.

Each factor in this quartet is always of equal importance and of unchanged importance. That is, if the fuel or fuel substitute (electricity) costs 50% more, the yearly fuel cost will be 50% more. If the Btu heat loss of the building is halved, the yearly fuel cost is halved . . . using any fuel or fuel substitute. If the equipment deteriorates or is operated poorly so that its efficiency is half of what it should be, the yearly fuel cost is doubled. If the efficiency of a new heating plant is half of what it should be, it follows logically that the fuel cost will be twice what it should be.

Four factors thus govern the yearly fuel bill; only one of these is the matter of how many Btu's are obtained for each cent spent on the fuel.

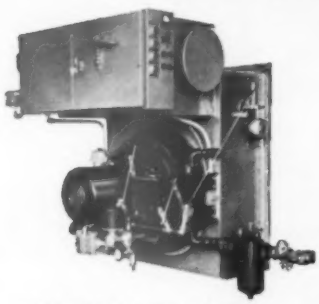
❖ ❖ ❖

ASME Power Show scheduled in New York, November 28

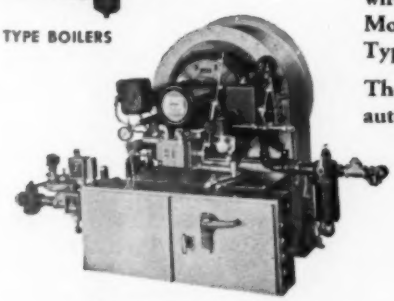
NEW TRENDS in industrial economy will be featured at the forthcoming 24th National Exposition of Power and Mechanical Engineering, sponsored by the American Society of Mechanical Engineers.

The biennial Exposition will be held November 28 to December 2 at the New York Coliseum. Admission will be by invitation and registration only.

For maximum Heating Economy... **JOHNSON FORCED DRAFT** *Package Unit* **BURNERS**



FOR FIREBOX TYPE BOILERS



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Get Smooth . . . Quiet . . . Exceptionally Efficient Combustion regardless of Stack Conditions and Firebox Pressures!

These compact burners are available for firing on Oil only . . . Gas only . . . and for Combination Oil or Gas firing. With either fuel, they deliver low-cost heating with a minimum of servicing and supervision. There's a size for every heavy-duty heating need, from 28 HP to 560 HP.

These "package-unit" burners come to you completely assembled, wired and tested . . . ready for quick, inexpensive installation. Models are available for use with either Scotch Type or Firebox Type boilers.

They are powered by the world famous Johnson 53 Burners which automatically maintain a fixed air-fuel-ratio regardless of variations in oil viscosity . . . thus insuring easier, faster "cold starts" when the oil in tank and fuel lines is cold and hard to pump. If you seek truly fine performance and low operating costs on your big heating jobs, by all means check up on these Johnson Forced Draft Burners.

Johnson Burners

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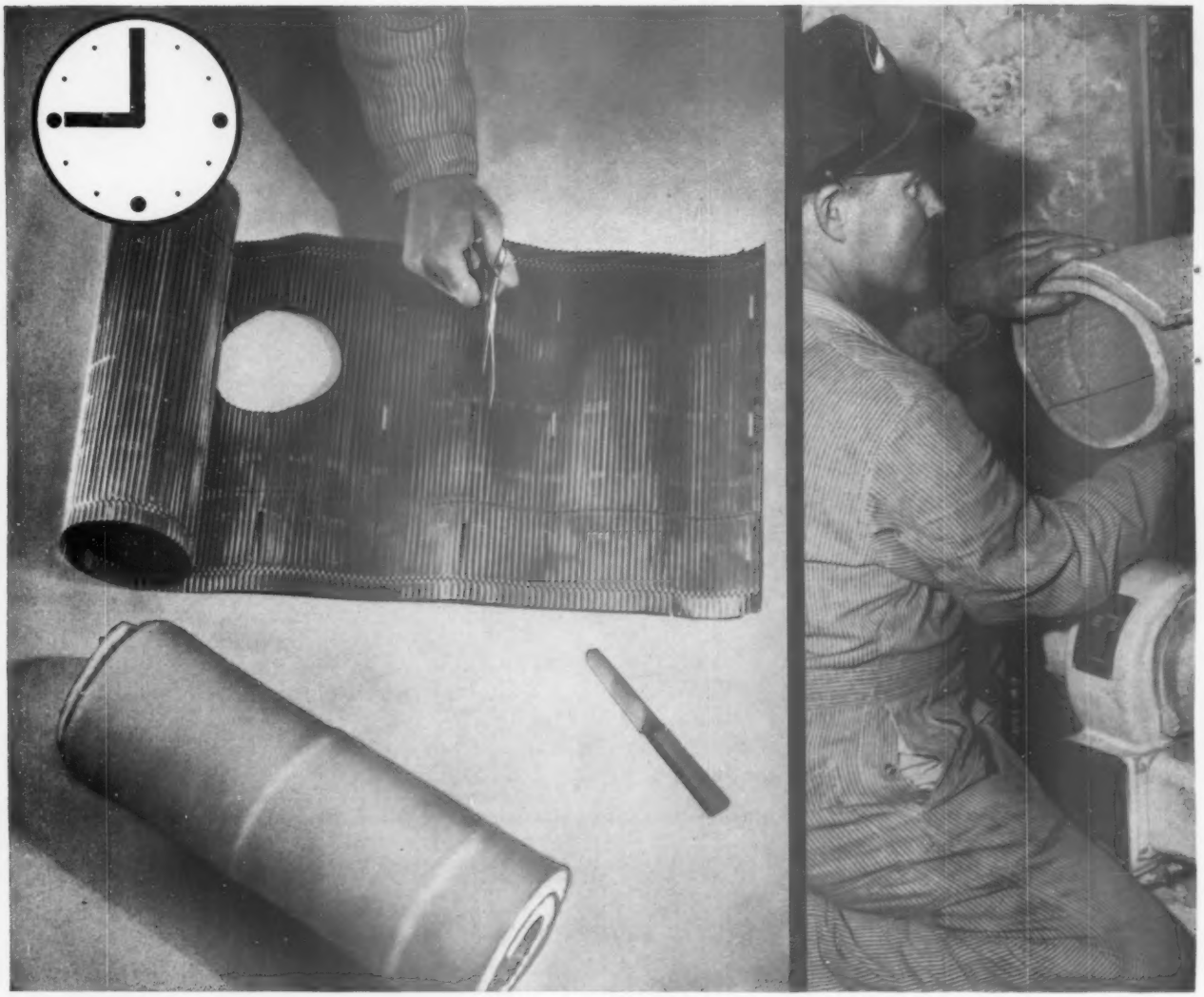
Builders of fine Oil Burner Equipment since 1903



Just scissors...a knife.

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One man can install this 4½ lb. Cerafelt chamber in just 30 minutes, using the simplest of tools. When you compare this with the usual 5-hour job that can involve up to 200 lbs. of bricks and mortar—you can readily see that here's a product that *lets you make money on service!*

LOOK AT THESE CERAFELT FEATURES:

- *Quick Installation—simple tools suffice*
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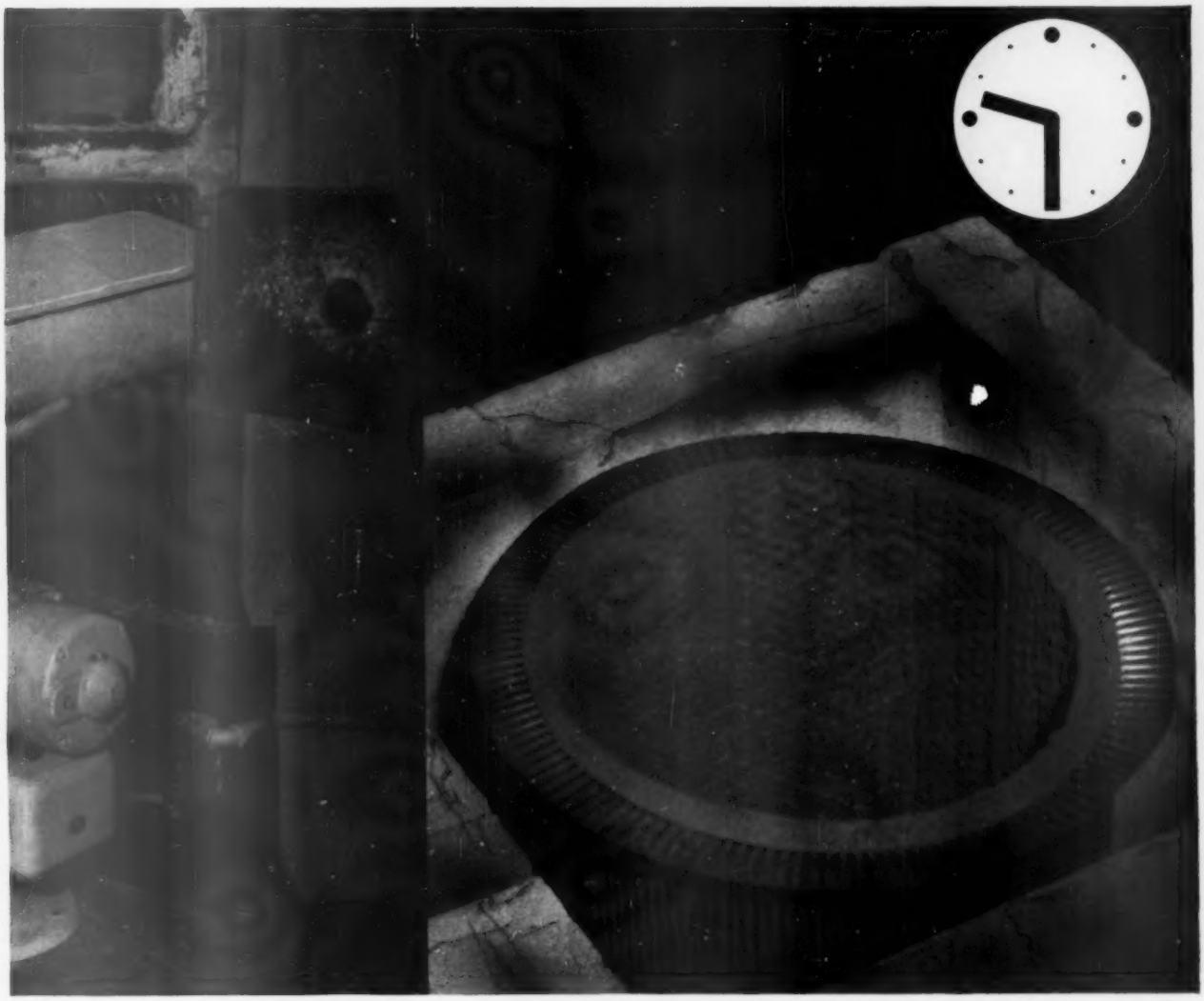
And that's not all! Your customers will get clean, near-perfect combustion that saves up to 20% on fuel bills. Chamber temperature is as much as 300 F hotter...soot, smoke, odor and noise are reduced to virtually nothing. A Cerafelt chamber



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lasts indefinitely... is unaffected by moisture... and heats to maximum refraction in 10 seconds. It also permits reduction of chamber size to 70 sq. in. per g.p.h. nozzle fire. A Cerafelt installation will pay for itself the first year!

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fueloil & oilheat

Readers' Problems

Q. Graduated from an oilburner course, and in service work since last August. Suspecting the white-collar man who gives me orders is a theorist (he can't even use tools), I cannot prove this. But if I thought I could, I wouldn't try, for I'd wind up being fired. He tells me to adjust new jobs for 10% CO_2 and No. 1 smoke reading. I cannot tell him often this is impossible. Where it is, should I set for the 10% CO_2 or for the No. 1 smoke? I cannot tell this to the boss, but of course he's telling me to do the impossible every day.

J. E. X., Long Island City, N. Y.

P. S. I trust you not to print my correct initials in your column, for if you did you'd get me fired.

A. Set up for the proper smoke reading of No. 1 or No. 2, and take the CO_2 reading that comes with it. The reason for that is you should not adjust for anything but a clean flame, which will not soot up the flues rapidly and produce chimney smoke. Any slight or great inefficiency that comes with the clean flame, on your new installations, must be tolerated. Excellent installations should, of course, produce both low smoke readings and CO_2 readings satisfactorily high. Installations that can't have defects or shortcomings.

P. S. Don't worry, for the initials that follow readers' questions in this department always are scrambled. Identifiable initials such as E. E. or W. W. are changed so they can't be identified.

Q. I have a problem on an installation about the smoke. In this boiler carrying a load of 675 sq. ft. of forced hot-water radiation, the firebox is prefabricated of six pieces, and has a baffle. I was called to do a clean-up job recently. This is the third winter the job has been in use. I cleaned the boiler very well inside, and changed the oil filter element. Firing the burner with its clean 1.35 gph 80° nozzle in it, it gives a smoke test #6, 10% CO_2, stack temperature 600°.

I couldn't adjust the air on the burner to get less smoke because its air adjustment was wide open. The over-fire draft was .04" and the stack draft was .08".

To get less smoke I had to lower the pressure from 100 lbs. to 85 lbs. Then it gave a smoke test of #3, 8% CO_2, and stack temperature 500°F.

I installed a 1.20 gph 80° H nozzle. It did the same thing with the oil pressure at 100 lbs.

I changed nozzles again, installing a 1.00 gph 80°. It gave a smoke test of #2, 8% CO_2, stack temperature of 400°F., and I could use the air adjustment on the burner to adjust for more or less smoke.

Could you please tell me why the 1.35 and 1.20 gph nozzles gave me so much smoke that I could not get rid of.

L. O. R., P. Quebec, Canada

A. First, our heartiest congratulations to you for putting combustion-testing instruments to such highly effective use after you were called in only to do a clean-up job! If all other servicemen followed the excellent example you set for them, thousands and thousands of homeowners would enjoy better oilheating!

Your first test proved that with the burner's air damper wide open, this burner cannot fire this particular firebox at a rate as high as 1.35 gph without producing excessive smoke. That is assuming that the nozzle performance was satisfactory.

On that basis, if this burner can produce a good, smoke-free fire of as high a rate as 1.35 gph, to do this the burner needs a better firebox than it is firing.

Start by getting facts about the burner from its manufacturer. If it is supposed to produce a fire as large as 1.35 gph according to its manufacture's gph capacity rating of it, make certain its blower-wheel blades are reasonably clean. If they are, the burner seems satisfactory for the 1.35 gph rate, but questions arise about the firebox.

Find out if, according to the burner manufacturer's installation instructions, the firebox is of the proper shape, and large enough for the 1.35 firing rate. Your last test, which gave you the readings of smoke #2 together with 8% CO_2, may be telling you that this burner cannot fire this firebox at a higher rate without giving more smoke than is desirable.

Don't use a higher firing rate than is needed for proper heating on coldest mornings—for this or any other installation. Don't use as high a firing rate as 1.35 on this installation, unless you know that a lower firing rate will not heat the house properly. Of course, a tankless water heater in such a small boiler may require a higher firing rate than could be used if the boiler served only for heating radiation.

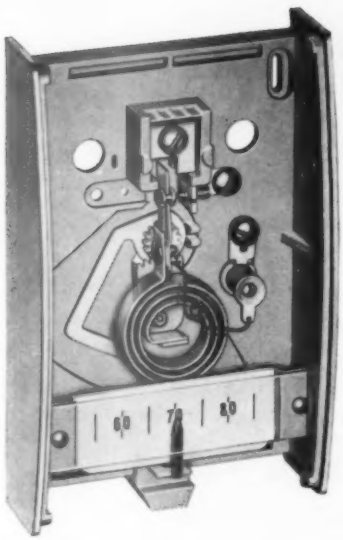
Q. The owner of a large, old home, heated by a two-pipe steam system having thermostatic radiator traps, complained to his oil company that on very cold mornings the gage on his boiler shows seven pounds steam pressure. The oil company asked me about this, as years ago I installed this steam system and many others. What puzzles me is that I watched operation of the boiler plant on a cold day, 35°F. outdoors, and all the radiators heated nicely though the boiler pressure was not even up to one pound each time the burner stopped.

W. T. S., Aurora, Ill.

A. First, simply adjust the high-limit control, the steam-pressure control that can stop the burner, for much lower maximum steam pressure. It is now adjusted to stop the burner at seven pounds boiler pressure. Set it to stop the burner at two pounds pressure.

Second, observe the burner in operation on a severely cold morning. If it is stopped too often by its steam-pressure control (now set at two pounds), have a serviceman reduce the burner's firing rate by about one-third. If this steam-pressure control stops the burner more than twice in 30 minutes, the burner's firing rate is too high.

NOW...



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You'll like the time-tested mechanism with positive snap-acting contacts that can't chatter to cause vibration complaints . . . the one piece installation that requires no mounting bracket — no leveling . . . and the simple, positive ring-type heat anticipator.

And, the new Penn Type 820 does an outstanding job of control . . . responding rapidly to any temperature change . . . holding temperature within a fraction of a degree of selected level . . . giving the accurate, dependable service you've come to expect from Penn controls.

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AUTOMATIC CONTROLS FOR HEATING, REFRIGERATION, AIR CONDITIONING, APPLIANCES, PUMPS, AIR COMPRESSORS, ENGINES

Q. Servicing burners using No. 6 oil for a year now, I wonder why my boss installs globe valves on the input side of suction line strainers, the valves you turn off to clean the strainers. Wouldn't gate valves, without the S-turn in them of globe valves, give easier flow of oil to the pumps in these rotary-cup burners? Normal readings of vacuum gages, which I install on output side of strainers for testing, are as high as 12" with all oil lines very hot during heating season.

R. D. P., Chicago

A. As you can easily check by trying a gate valve on one job, using it instead of a globe valve will not reduce the vacuum gage reading appreciably—will not drop it by even ½". Your 12" readings are caused by suction-line pressure-drops other than those of the gate valves. Don't worry about readings as high as 12"; today, readings up to 15" are usual.

Q. As an executive of an oil company servicing thousands of installations, I am starting to realize that not all of our customers' warm-air furnaces need flue cleaning every year. How to determine which need flues cleaned during a yearly check-up?

U. H. S., Flushing, N. Y.

A. If you aim to do the usual, let your servicemen decide by inspecting the flues. To be exceedingly precise, go by stack temperature readings also. Clean the furnace flues only if the need to clean them has increased the stack temperature about 25°F. or 50°F. above what you know it should be with the flues clean.

Q. The superintendent of a medium-size apartment house, heated by 41,000 gallons of No. 5 oil a year, complains that in mild weather the one-pipe steam radiators in his apartment heat only halfway each time the burner makes steam. That's with the big-building heat-control system, governed by outside temperature, adjusted the way I like it adjusted. My adjustments cause no other complaints in mild weather. Is the superintendent correct in saying the burner should make more steam, each time it runs in mild weather? C. H., Newark, N. J.

A. You are correct. You should set things up for the shortest oilburner "on" periods in mild weather which will cause proper distribution of steam to all the radiators—which will heat all radiators more or less evenly, leaving none cold and none especially hot compared to most. The superintendent's idea is wrong because it would result in mild-weather heating that's unnecessarily bumpy.

Q. If No. 10 wire is the correct size for the circuit of a certain compressor model on one job, isn't it the right size for all jobs?

S. P. L., Belmont, Calif.

A. Not necessarily. On an exceptional installation, voltage drop of the circuit may be unusually important because of chronic low line-voltage at the meter. On another exceptional installation, the circuit may be many times the usual length. The use of a wire size larger than No. 10 may provide important advantages in both these instances.

(*Please turn to page* 110)

YOU WOULDN'T PLAY GOLF WITH ONLY A PUTTER

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The handling characteristics to move the goods. For fancy footwork around an airport or swift mobility in congested areas, you can't beat the N Model's shorter length, optional power steering, air-hydraulic clutch, or the panoramic visibility through its 3600 sq. in. wrap-around windshield.

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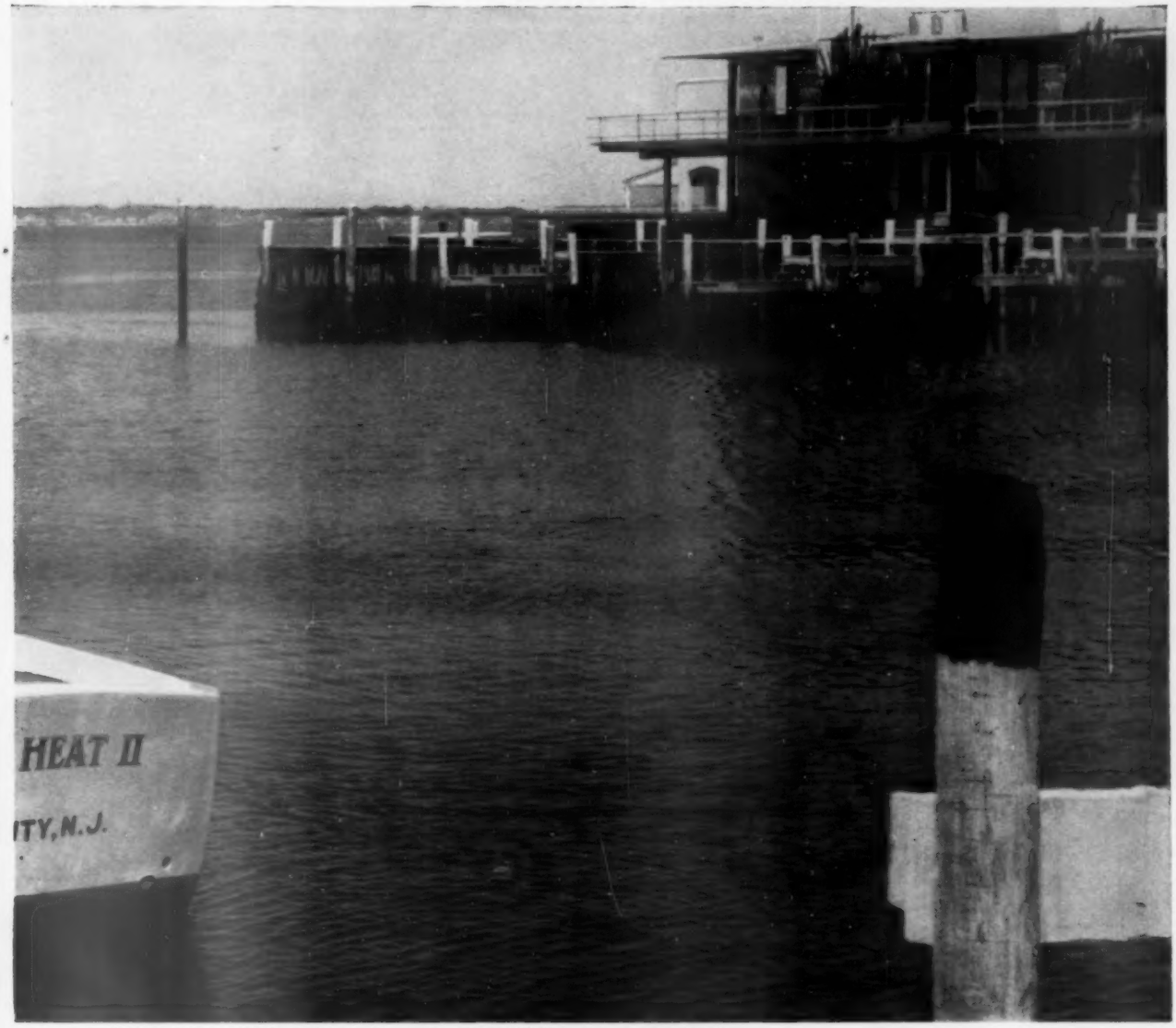
Solar Heat Dealer Mixes

Jack Neall's prize wall decoration—a husky swordfish caught off Ocean City during an outing on "Solar Heat II."

JACK NEALL, owner of the Milton Hagerthy Oil Company, also owns a boat. He calls it "Solar Heat II." Ask him why and Jack says, "Why not? I can fish and continue to promote the business at the same time.

"Promotion's a big thing in fuel oil. I get plenty of help from Gulf. No reason why I can't carry it one step further. You never know when a prospect will spot that name. The more I keep reminding local people about Solar Heat, the more customers I get. That's what I'm in business for."



Jack has skippered the Milton Hagerthy Fuel Oil Company since 1954.

Business with Boating

Jack Neall's got a great idea. But you don't have to own a *boat* to promote Solar Heat. Gulf's Solar Heat advertising and sales promotion material is plentiful and effective. Tells the clean-heat story clearly and convincingly.

Solar Heat's big competitive advantage, the exclusive *Hydrogen Purification* process, cuts down on maintenance calls. This means you spend less time servicing and more time doing what you'd like to do . . . say fishing? More profits, too!

Get the complete story on Gulf Solar Heat. Phone your nearest Gulf office today, *collect*. Find out how you can get more from *your* fuel oil business with the Solar Heat Brand. Only Gulf offers so many exclusive selling, advertising and promotional ideas!

Go one better
—Go Gulf

GULF
SOLAR HEAT
heating oil

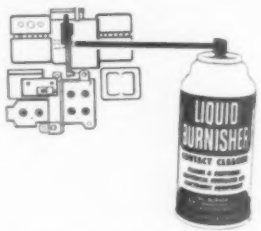
fuel oil & oilheat

Get in
on the
"Ground Floor"
with
CAMERON/HYDRONIC
JET-O-MATIC RADIANT HEAT
THE SENSATIONAL NEW OIL-FIRED SYSTEM
Exclusive distributorships are available in each area of the country to qualified dealers interested in handling the boiler *designed* for oil firing, CAMERON/HYDRONIC; the new compact, low-cost oil-fired system that lets you *really* compete with other fuels.
This amazing new high efficiency unit, and its companion "CAMBOARD", the modern concept of radiant panel (about $1.00 a lineal foot and only 5/8" thick) provides a flood of clean, quiet heat with unrivaled efficiency and economy.
call or write Mr. Patrick Hart, *Vice-President*
SOUTHERN STEEL & STOVE CO., INC.
6th & Dinwiddie Streets
Richmond 24, Va.
BElmont 3-6981

NEW PRODUCTS

Liquid Burnisher cleans Contacts, is packaged in aerosol Container

LIQUID BURNISHER, electrical contact cleaner, is packaged in an aerosol container, having approximately 300 applications. The container has a 5" insulated plastic tube for application in hard-to-get-at areas. One spray leaves contacts cleaned, restored and burnished, says the manufacturer.



The liquid leaves no residue and is designed to prevent rust, corrosion and pitting. Recommended for application on relays, solenoids, thermostats, etc.

Made by: The Tankit Co., Inc., 560 Belmont Ave., Newark, N. J.

Airtemp Effective Temperature Controller adjusts for humidity Rise on cooling Jobs

AN EFFECTIVE TEMPERATURE CONTROLLER developed by Chrysler Airtemp compensates for a humidity rise on cooling jobs by lowering the dry bulb temperature. For example, in mild weather or at night when the unit does not run enough to keep humidity down, the humidistat registers any rise and closes a circuit to the thermostat which contains an auxiliary heater. The heater adds artificial heat to start compressor operation and hold humidity at a comfortable level.

In effect, this action lowers the thermostat setting, lengthens the operating cycles and lowers the humidity reading.

Made by: Chrysler Airtemp, P. O. Box 1037, Dayton 1, Ohio.

Talking to customers about firebox installation?

Point out that

B&W IFB

also means savings

In Fuel Bills

Here's a "dollar-and-sense" sales story on firebox installation that will help your customers save 15-25% in fuel bills. That's how much B&W Insulating Firebrick, *the lightest insulating firebrick made,* can cut fuel bills each year.

The reason? B&W IFB have millions of tiny air cells that impede the flow of heat. As a result, these brick come up to operating temperature faster. Heat is held inside the combustion chamber. That means lower fuel bills, more complete combustion, clean and odorless heat.

Increase your sales and profits by telling your customers the benefits of B&W fireboxes. It's an effective way to build your reputation in a community.

A Valuable Guide for Every Installer

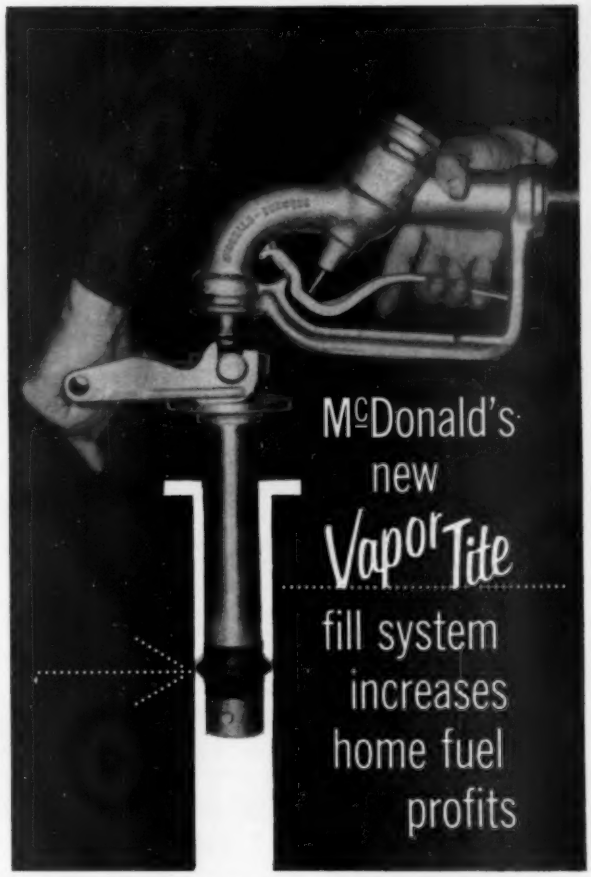
Send today for this Handbook! R-623

THE BABCOCK & WILCOX CO.

Refractories Division

Works: Augusta, Ga.

General Offices: 161 East 42nd St., New York 17, N. Y.



cuts delivery time and eliminates overflow and dripping

■ With a McDonald Vapor-Tite fill system on your trucks, home fuel oil deliveries are made quickly and easily . . . you can cut home fuel delivery time by seven to ten minutes per call. The Vapor-Tite system eliminates overflow and dripping, too. These features can substantially increase your profits through savings in time and wasted product.

■ McDonald's new Vapor-Tite fill system combines a Vapor-Tite fill tube with a McDonald Fuel Oil Nozzle. One unit goes on each truck. No adaptors are needed. This also eliminates costly material and labor expense involved in placing adaptors on the customer's fill pipes.

Here's how it works

□ When fill is to be made, simply drop the tube into the fill pipe and press down on the handle. The composition sealing sleeve expands and forms a vapor-tight connection with the inside of the pipe.

□ No chance for vapor to escape and cause a hazard. McDonald's Fuel Oil Nozzle combines rugged design with light weight. Offers effortless operation, chatter-free opening and closing. Contains McDonald exclusive shock eliminator — a special shock mechanism that preserves the nozzle, protects the line, pump and all other connection parts from damage due to sudden shock.

□ McDonald Vapor-Tite Fill Fuel oil systems are equipped with either aluminum or bronze nozzles. 1¼" in bronze (820), 1¼" and 1½" in aluminum (821). Special reducer is available for fill pipes, less than 2" size.

For complete information on McDonald's new Vapor-Tite Fill system write today.

A.Y. McDONALD MFG. CO.

Dept. FO-860, 12th & Pine, Dubuque, Iowa

IT'S NEW
IT'S POWERFUL
IT'S THE
HARVEY SHORTY

FURNACE AND INDUSTRIAL VACUUM CLEANER

It's the new compact Shorty that delivers big cleaner performance in a small package. Its 20¾" height enables it to be carried upright in even the smallest luggage compartment. The Harvey Shorty has a powerful ⅞ HP motor that provides plenty of suction. Two inside dust bags give you better filtering action and positive protection against costly blowouts. The Shorty holds up to ½ bushel of soot and dirt, enough for the average cleaning job. The one hand carrying grip makes it a honey to handle.

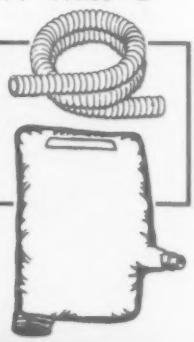
HARVEY FLAT TOP FURNACE VACUUM CLEANER

Sid Harvey's big cleaner comes in two models, Junior and De-Luxe. Both have all the desirable features of the Shorty, with greater capacity. The De-Luxe holds one full bushel of soot or dirt, the Junior has ¾ bushel capacity. Heavy duty casters make it easy to handle.

TRADE PRICES — Complete with Attachments

Harvey Shorty	$ 95.50
Harvey Flat Top Jr.	99.50
Harvey Flat Top De-Luxe	111.65

ATTACHMENTS and SPARE PARTS for other cleaners such as Doyle, G-E, Kent, Nu-Vac, Premier, Pullman, Super-Suction and Tornado.



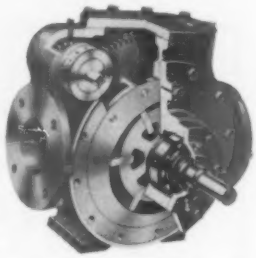
Write for Sid Harvey's catalog of Automatic Heating Parts, on your firm's letterhead. It's FREE to the trade.

AVAILABLE AT ALL SID HARVEY STORES

SID HARVEY INC.
VALLEY STREAM, NEW YORK

Blackmer Vari-Flo rotary Pumps select any desired flow Rate

VARI-FLO variable-capacity rotary pumps permit dialing of any desired flow rate from zero to full capacity without changing pump speed. Can be powered with any standard-speed motor.



Vari-Flo is offered in 2, 3 and 4-inch sizes, providing capacities up to 450 gpm, with four pumps in each of the three sizes. Design, with the exception of the dial-controlled rotating liner, is substantially identical to Blackmer's regular line. Vari-Flo can reverse its flow while in operation.

Made by: Blackmer Pump Co., Grand Rapids, Mich.

Olson truck throttle Control now available in electric Model

THE OLSON electric throttle control automatically increases engine speed to the efficient pumping speed only when the fueloil delivery nozzle is opened and oil is flowing. This is an improvement over the original non-electric model. The engine automatically returns to idling speed when nozzle is closed.

The previous control had a needle valve and seat opened by movement of a magnet; the electric model operates with a solenoid valve. When the valve is open vacuum is supplied to a vacuum control. Using the engine vacuum, current consumption is less than one ampere; current is used only while oil is flowing.

Made by: Olson Throttle Control, Inc., Broadway, Raynham, Mass.

Brodie unattended bulk plant Meter furnished with two to six Totalizers

A NEW UNATTENDED bulk plant meter counter has been introduced by Ralph N. Brodie Co. It has been designed for use on meters at bulk plants where an attendant is not on duty and the driver does his own loading.

This Brodie counter has many labor-saving and built-in features to protect both the plant owner and driver-operator. The counter can be furnished with from two to six totalizers or one counter can be mounted on top of another to provide 12 totalizers. The Brodimatic counter or printing counter is mounted on top to provide a record of total thruput of the meter.

Made by: Ralph N. Brodie Co., San Leandro, California.

LOOKING AHEAD TO GROWTH?

Look to Talcott for your financing

If you can increase your sales, then you can increase your NET PROFITS, by using our funds. Experienced executives with years of service to the heating oil industry will tailor a flexible Financing Plan to your specific needs. Get in touch with Lexington in Boston or the Talcott office nearest you for full facts.

- Accounts Receivable (Non-Notification)
- Factoring (Notification & Non-Notification)
- Inventories and Equipment Mortgages
- Industrial Time Sales • Leasing
- Rediscounting

OUR SECOND CENTURY — JT — FOUNDED 1854 — FINANCING AND FACTORING

LEXINGTON CORPORATION
10 Milk Street, Boston, Massachusetts
Liberty 2-6264
a subsidiary of . . .

James Talcott, Inc.
FOUNDED 1854

NEW YORK
CHICAGO • DETROIT • BOSTON • ATLANTA • LOS ANGELES

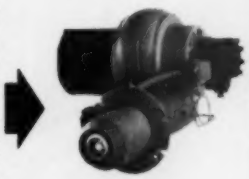
Most WANTED! *for top* QUALITY PERFORMANCE

KORTH

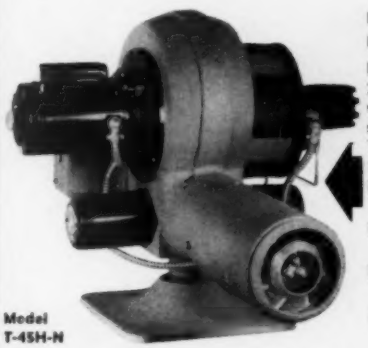
IMPROVED SHELL HEAD BURNERS

FOR TOP QUALITY AND TOP PERFORMANCE sell and install KORTH Shell Head oil burners. Product quality—famous with KORTH—insures higher profits, results in more customer satisfaction through higher combustion efficiences, lower operating costs, and service-free operation. Models and sizes from .75 through 20.0 gph provide a complete line of burners for all requirements.

ADJUSTABLE, UNIVERSAL FLANGE MOUNTED burners with or without improved Shell Head are available for all furnace and boiler units . . . ideal for replacement jobs or with new units. New style flange design permits easy adaptation to front plate studding and exact setting for proper tube length. The extra heavy gauge tube and cast iron flange insures firm, positive mounting.



Model SR-SH-1



Model T-4SH-N

BIG BURNERS for BIG JOBS . . . .

Models and sizes up to 20.0 gph equipped with M-H electronic safety controls (Group 7 & 8) factory mounted and wired.

Model T-3SH-10 4.00- 7.0 gph
Model T-3-10 4.50-10.0 gph
Model T-4SH-16 8.00-20.0 gph
Model T-4-16 10.00-20.0 gph

KORTH OIL FIRED HOT WATER HEATERS

Glass lined and Copper storage tanks.
Five sizes: 30, 45, 50, 65, and 70 gallons.
Recovery rates from 120 to 180 gph.
Five year Guarantee and five year warranty on glass lined tanks.

7½ year guarantee and 7½ year warranty on copper tanks.

A complete line of quality heaters priced competitively for high volume sales.

Investigate the advantages of Korth now . . . write for "Complete Information" today!

ECKHART MFG. CO. INC.
UNION, NEW JERSEY

fueloil & oilheat

The man who can't

"sandwich" a meal

Recognize him? He's the heating and air conditioning dealer. And, during the peak seasons, he's a stranger at his own dinner table. At home, or at the office, somehow the phone calls come in never-ending abundance. He's literally covered with requests for help—ranging from "right away" to "soon as possible."

But have you ever stopped to wonder why the *Lennox* dealer has fewer of those distress calls? It's because the Lennox factory does more to prevent them from happening! Lennox units come completely assembled, pre-tested, factory adjusted—ready to install in minimum time and with fewer call-backs.

Isn't it time for *you* to become a Lennox dealer? Get the full story without obligation. Call or write your nearest Lennox factory.

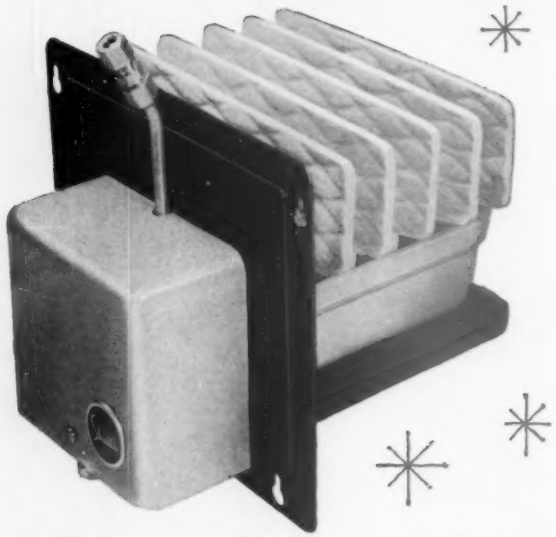
LENNOX *World leader in indoor comfort for home, business, schools*

Lennox Industries Inc. founded 1895
Marshalltown, Iowa • Columbus, Ohio • Syracuse, N. Y.
Fort Worth, Texas • Salt Lake City, Utah • Decatur, Ga.
Los Angeles, Calif. • Des Moines, Iowa
Lennox Industries (Canada) Ltd. • Toronto, Montreal, Calgary and Vancouver

Skuttle's 25th Anniversary

FREE INTRODUCTORY OFFER

Buy one Model 711, get one free!



As a Silver Anniversary gift, Skuttle offers you an outstanding value on the Model 711 Humidifier. Buy one — get one FREE! Included in this introductory offer is an attractive point of purchase display to attract more attention . . . promote more sales! This offer is limited to dealers ONLY, and expires on October 1, 1960. Only one offer per dealer.

The Model 711 is shipped completely assembled for instant installation. The compact design, reversible valve seat with built-in splash guard, stainless steel plate rack and 100% pure glass Vapoglas plates assure trouble-free operation.

Send check or money order today for FREE introductory offer

GENTLEMEN:

Enclosed is a check ☐ money order ☐ in the amount of $10.00 for your FREE INTRODUCTORY offer on the Model 711 Humidifiers. I understand these 2 units will be completely assembled and include a point of purchase display.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ STATE_____

Skuttle MANUFACTURING COMPANY
MILFORD, MICHIGAN

Handy Record of fueloil Deliveries and household Expenses from Kenlee

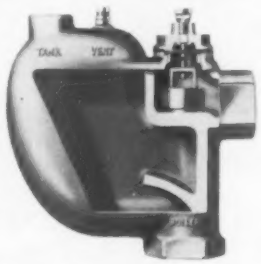
KENLEE offers an imprinted envelope for fueloil dealers to distribute to their customers. It measures 10¼" wide by 4½" deep and is made of durable paper stock. The customer uses the envelope for receipts or bills and to keep a record of individual fueloil deliveries; spaces are provided to record up to 16 deliveries, including the date, number of gallons, amount of delivery, etc.

Also on the inside of the over-sized envelope flap, the customer may enter monthly household expenses, such as feuloil, electric, phone, etc. Kenlee imprints the envelopes and offers them at varying prices based upon quantities.

Made by: Kenlee & Associates, 9964 Gratiot Ave., Detroit 13, Mich.

New Watts combination Unit is air Eliminator and flow Check

A COMBINATION air eliminator and flow check, Type 500, for hot water space heating systems, is a one-piece casting, with tapping available for the expansion tank line.



The unit's flow path directs air to the surface for fast removal, with the flow check preventing gravity flow and permitting summer operation of the domestic water unit. Type 5100 is furnished with the flow check and air-vent for use as an air eliminator only.

Made by: Watts Regulator Co., Lawrence, Mass.

"Don't spend too much to heat the church next Sunday, tomorrow they're opening the back nine at the country club."

THESE AMERICAN-STANDARD OIL FURNACES ARE FACTORY ASSEMBLED AND WIRED TO

CUT INSTALLATION COSTS

MODEL U-OB

MODEL CF-OB

NEW! Upflow Model U-OB

60" low x 20"-27" wide x 32½" deep

4 sizes: 84,000–95,000–112,000–140,000 Btuh

This brand-new oil-fired winter air conditioner is shipped completely factory-assembled and wired, with burner installed. Burner and controls are completely enclosed in an attractive cabinet that's so compact you can install it almost anywhere—basement, utility room, game room, hallway, alcove.

The small size is made possible by a new-type sectional heat exchanger that gives more heating surface in less space, extracts maximum heat—and gives *you* a strong fuel-economy sales story. Both the primary control—with flame-sensing device in the burner blast tube—and the fan-and-limit control are factory-connected to a single Central Control Station.

NEW! Counterflow Model CF-OB

65" low x 20"-24" wide x 32½" deep

3 sizes: 84,000–95,000–112,000 Btuh

Here is the best-engineered counterflow unit made today.

For example, a new-type sectional heat exchanger provides maximum radiation surface in minimum space. The new Central Control Station handles *every* operation of the furnace automatically. The new primary safety control is factory-mounted right in the burner blast tube.

"MERCURY-ROUND" THERMOSTAT

Here's big news! This DeLuxe mercury-activated Thermostat is standard equipment on all belt-drive furnaces *at no extra cost.* The new hermetically-sealed mercury switch eliminates dust and dirt problems. Clear plastic baseplate speeds installation. If desired, cover can be detached and painted to match any color scheme.

Both the U-OB and the CF-OB are equipped with the proven American-Standard "ACD" burner, which has earned a reputation among dealers as "the most reliable burner on the market." These two units are *all* you need to handle 95% of your oil-fired installations—basement, utility or counterflow. (If you need larger capacity, a two-furnace installation has definite advantages.) Units convert easily to gas . . . cooling is easily added. Get the spec sheets and the low competitive prices at your American-Standard distributor today.

AMERICAN-Standard

AIR CONDITIONING DIVISION

Elyria, Ohio

fueloil & oilheat

Make Faster Deliveries Street-side or Curb-side

New HANNAY 2-Way High Capacity Reel

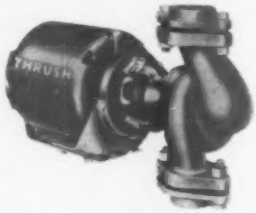
The new Hannay 200 Series reels make street-side or curb-side deliveries with equal ease. These are reels designed especially for flow rates in the 75-100 GPM range, with full-flo 2" I.D. inlet-outlet hubs designed to reduce pressure loss through the reel by up to 58% at 75 GPM. Special frame design with optional ball-bearing rollers permits fast unwinding and rewinding on either side of the truck. Ask your tank truck builder or oil equipment jobber about Hannay 200 Series reels, or write for complete information and catalog.

Hose Reels by HANNAY

CLIFFORD B. HANNAY & SON, INC., WESTERLO 9, N. Y.

Thrush Model B bronze Circulator recommended for fresh water Use

MODEL B Thrush water circulator has all parts which are in contact with water made of bronze, including the body and flanges. Designed for fresh water use, there are four sizes: ¾", 1", 1¼" and 1½", made from the one body using interchangeable, two-bolt flange.



Model B incorporates the Thrush - patented spring coupling and special pump bearing construction. Motor is thermally protected; circulator has ceramic water seal and balanced impeller.

Made by: H. A. Thrush & Co., Peru, Ind.

OPW has new 'straight-line' Design fueloil Nozzle; manhole centering Guide

OPW NO. 190 NOZZLE for fueloil delivery has a "straight-line" design; hanger hook does not project beyond the spout so that it can be used upright even when filling close to a wall.

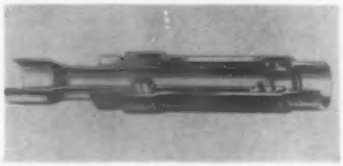
Available in sizes 1", 1¼", 1½" and 2"; recommended flow for the 1½" size is 60 gpm. OPW No. 190 has dual poppets to permit easy opening under pressure and built-in dash pot to control line shock.

Shipped with every manhole ordered from OPW is a centering guide to properly position 7½", 9", 10 and 12" manholes around 3" and 4" pipe. The guide is corrugated board with die-cut sections.

Made by OPW Corp., 2735 Colerain Ave., Cincinnati 25, Ohio.

General Fittings expansion Joint incorporates piston seal Design

GENERAL FITTINGS new expansion joint of piston seal design utilizes wear resistant "O" rings. Each joint compensates for expansion movement of 100 lineal feet of copper tubing for 120° F. temperature rise and 35° F. temperature drop.

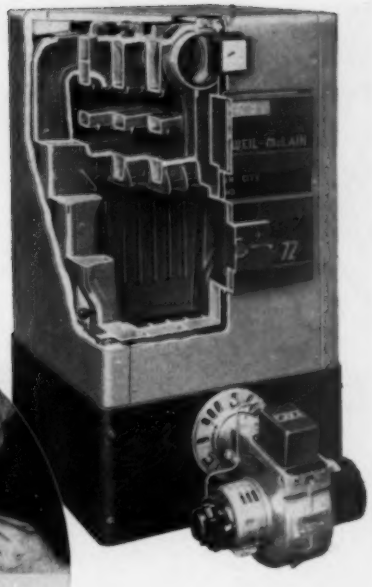


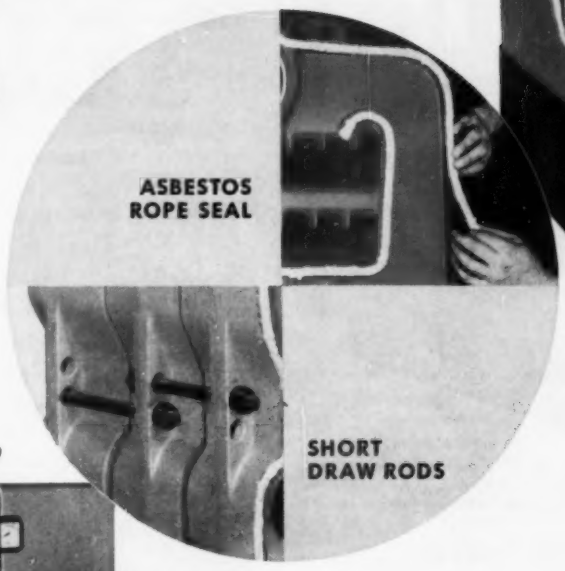
Intended for use with baseboard radiation as well as other piping systems, the joint's piston seal design facilitates installation, allows 360° rotation of coupling ends.

Made by General Fittings Co., East Greenwich, R. I.

WEIL-McLAIN

COMMERCIAL CAST IRON SECTIONAL OIL BOILERS CUT INSTALLATION TIME





No. 82
Net load range—
Hot water: 339,100—793,700 BTU/hr.
Steam: 1415—3305 sq. ft.
Send for Bulletin C-270

No. 72
Net load range—
Hot water: 180,000—331,600 BTU/hr.
Steam: 750—1380 sq. ft.
Send for Bulletin C-226

These boilers offer a strong competitive advantage because of features which shorten installation time.

The *exclusive* asbestos rope seal, for example, which fits into a grooved seal strip in the sections, door frame and smoke collar. The rope is compressible and if the boiler "grows," it will not crack or squeeze out...assures a permanent gas-tight seal.

The sections are tied together with multiple short draw rods, simplifying assembly. These draw rods can expand and contract with the boiler, relieving sections of strain and adding to boiler life.

Maintenance at peak efficiency is easier, because top cleanout openings allow cleaning all heating surfaces.

Available in three arrangements

Both 72 and 82 Boilers are offered as a "B" unit, with burner, combustion chamber and controls; as an "A" unit, with combustion chamber and flange mounted base front only and an "O" unit, without burner or combustion chamber.

FOR THE "NEW LOOK" IN BUILDING

Apartment houses, built for renting, are the big trend in new construction. Weil-McLain Cast Iron Baseboards are mar and dent-proof...immune to the rough treatment likely to occur with constantly shifting tenants.

Available in 7" and 9" heights

WEIL-McLAIN
BOILERS · RADIATORS

WEIL-McLAIN COMPANY
MICHIGAN CITY, INDIANA

Address literature requests to Dept. B-80

fuel oil & oil heat

stainless steel

- for longer life
- easier installation
- greater sales appeal

Vaporite
AUTOMATIC
HUMIDIFIER

PRECISION BUILT TO AVOID COSTLY "CALLBACKS"

NEW COMPLETELY STAINLESS
MODEL 999
For any straight side warm air furnace

- Water leveling type
- New diaphragm design
- Only 4 lbs completely assembled . . less than 3¼-lb. strain on bonnet metal or plenum wall

2 GREAT TIME-PROVED
THERMOSTATIC CONTROL MODELS

STAINLESS STEEL PAN . . .
heats more quickly . . . vaporizes water faster . . . resists chemical action of hard water . . . lasts far longer

SERIES 555C

For any straight side warm air furnace

SERIES 577

For slanting or straight side warm air furnace

AUTOMATIC DRIP-FEED VAPORIZATION
Thermostatically controlled valve admits water to vapor pan in carefully measured amount for balanced humidity

PROVED BY 20 YEARS OF USE IN THE MIDWEST
. . . heart of the warm air industry

WRITE FOR FREE LITERATURE

AUTOMATIC HUMIDIFIER CO.
CEDAR FALLS, IOWA

Manufacturers since 1925 of a Complete Line of Automatic Humidifiers for Warm Air Furnaces

Gibraltar GCB commercial Series for large boiler heating Jobs

GIBRALTAR'S GCB low line commercial boiler series is designed for large heating loads; the series ranges up to 64,300 sq. ft. SBI approval rating.

The line features low boiler height, while maintaining large furnace volume and a high steam dome. No dry base and no pit are required; full firebox opening provides labor saving access. Specially-designed windbox for second air and copper coils for hot water supply are available.

Made by: Gibraltar Corp. of America, 223 North 9th St., Brooklyn 11, N. Y.

Mt. Hawley '600 Series' Boilers in deluxe or standard Packages

MT. HAWLEY'S "600 Series" residential boilers feature "Miracle-finned" crown sheet, which provides a larger heating surface. Boilers have non-clogging flue channels, which, the manufacturer explains, induce a gas-scrubbing action without use of baffles.

The series includes boilers with output ratings from 64,000 to 112,000 Btu/hr, available as a standard or deluxe package unit adaptable to small residential and housing project applications.

Made by: Mt. Hawley Mfg. Co., 1209 Alta Rd., Peoria, Ill.

"He's starting to use dirty words; today he said 'nuclear power.'"

A TREMENDOUS NEW SALES OPPORTUNITY:

CARRIER AUTOMATIC AIR PURIFIER

Now, for the first time, you have the answer for millions of Americans who want better indoor air. The new Carrier Automatic Air Purifier, adaptable to any forced air heating or cooling system, is the first practical way to control air-borne dirt and odors, as well as winter humidification.

REMOVES DUST, ODORS, POLLEN

With the new Carrier Automatic Air Purifier, you can offer relief from many harmful air-borne elements, stale air, and such troublesome odors as cabbage and tobacco.

CONTROLS HUMIDITY

The new Carrier Automatic Air Purifier gives you the sales appeal of freedom from irritation by bone-dry indoor air in winter. It adds moisture under precise control, keeping humidity at the desired level.

CLEANS ITSELF

The new Carrier Automatic Air Purifier gives you a unique selling advantage over ordinary filter devices: It's self-cleaning, operating at constant efficiency without frequent changing or cleaning of filters.

ECONOMICAL

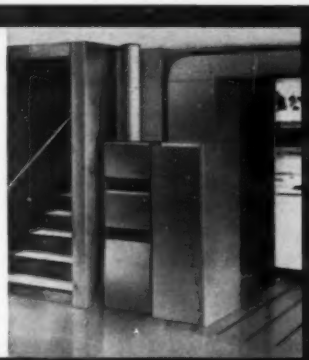
The new Carrier Automatic Air Purifier costs about $250 when installed as part of a new forced air system in an average home . . . slightly higher when added to an existing system.

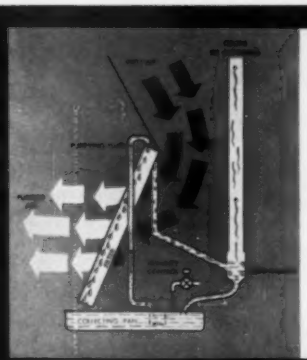
KEY TO A VAST NEW MARKET

Learn how the Carrier Automatic Air Purifier can open up a profitable new sales opportunity, with every homeowner or home buyer a potential customer. Call your Carrier distributor, listed in the Yellow Pages. Or, write Carrier Corporation, Syracuse 1, New York.

COMPACT AS A MODERN FURNACE

The Carrier Air Purifier (unit on right) replaces the return air duct, occupies little more space than a modern heating unit. Every homeowner with a forced air system, and every home buyer wanting complete air conditioning, is a prospective customer when you offer this remarkable new device.





HOW THE CARRIER AIR PURIFIER WORKS

Filter is constantly bathed by purifying fluid which absorbs odors and washes dirt into collecting pan. Part of the fluid is drained into regenerator, where odors are removed and water minerals are precipitated to keep the humidifying surface clear. A humidistat controls humidity level.

MORE PROOF OF

BETTER AIR CONDITIONING FOR EVERYBODY EVERYWHERE

Carrier

NOW!

AN INDUSTRIAL CLEANER WITH

REAL PORTABILITY

THE SOOTMASTER 601-8

New Elastic Top Reusable Filter Bag — Snaps on or off filter unit for quick easy cleaning.

- Lightweight and compact, the 601-8 can easily be carried from job to job and plant to plant.
- Convenient and powerful, the 601-8 combines heavy duty performance with real handling ease.
- More economical and efficient than larger more expensive cleaners.

MORE Important Features

- Maximum filtration for lasting suction.
- Powerful turbine fan suction unit.
- Controlled exhaust of clean filtered air does not disturb accumulated dust on basement walls and rafters.
- Finger-touch maneuverability — dollie has four swivel casters for stability. (the 601-8 can be ordered as an economy model without casters)
- Complete line of cleaning attachments are on the shelves of leading distributors.

MACHINE COMES COMPLETE WITH

- 10′ duck covered hose.
- 27″ furnace cleaning tool.
- handy hose carrying cage.
- 10 reusable paper filter bags.

Jobber and Distributor Inquiries Invited.

Distributed in Canada by: Imperial Refractories & Equipment Ltd. Refractories Building Waterloo, Ontario

There is a Mastercraft Industrial Cleaner for every maintenance job. Write today for descriptive literature.

mastercraft INDUSTRIES INC.

109 Lanza Avenue · Garfield, New Jersey

Model T600 Signet room Thermostat features a 'rounded square' Shape

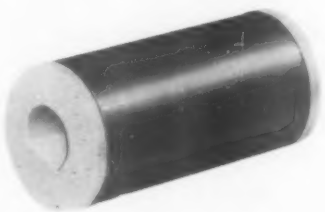
SIGNET CONTROLS has introduced Model T600 room thermostat, a small, compact instrument in a "rounded square" shape. It is a heat-anticipating type, with heater factory-matched to the controlled equipment; adjustable heater also is available. Both are replaceable.

Snap-acting contacts are platinum and iridium, with the entire contact assembly within a dust-proof enclosure. Wall-mounting plate is optional. The plate, in addition to holding the thermostat to the wall, automatically completes electrical connections.

Made by: Signet Controls, 3205 Southeast 13th Ave., Portland 2, Ore.

Slip-On oilburner flexible Coupling minimizes excessive Wear or Failure

SLIP-ON flexible oilburner couplings incorporate an effective and patented means for nullifying shaft play caused by variance in the depth of standard motor shaft flats. A unique assembly allows the coupling components instant, slight and momentary displacement from their normal fixed position when subjected to shock or starting load, allowing the bushing to ride with the blow.



Another benefit derived, the manufacturer states, is that the coupling operates in a state of static deflection to absorb vibration and noise.

Made by: Flexible Coupling Mfg. Co., 8145 South Dobson Ave., Chicago 19, Ill.

Mueller Climatrol announces Line of deluxe winter Airconditioners

AN IMPROVED, DELUXE line of winter airconditioners, announced by Mueller Climatrol, features large blowers and open-type construction to assure proper air delivery for winter heating and summer cooling. Models are available in six capacities, individually-sized furnaces, from 100,000 to 250,000 Btu/hr input.

Optional features designed for complete climate control include: electronic air cleaner, clogged filter indicator, summer airconditioning "cooling package," automatic electric humidifier.

Made by: Mueller Climatrol, 2005 West Oklahoma Ave., Milwaukee 1, Wis.

A DOUBLE-PROFIT PAIR...

BECAUSE EXCLUSIVE FEATURES COMMAND A PRICE WHICH BRINGS A PROFIT...AND BUILT-IN QUALITY LETS YOU KEEP IT

...THE STEWART-WARNER-WINKLER OIL-FIRED FURNACE

Equipped with Winkler *LP* low pressure Burner

A triumph of creative designing which combines efficiency and dependability with clean-lined, modern beauty! In its Imperial Sapphire and Horizon Blue jacket this oil furnace is a fast seller, because its top quality is apparent in every detail.

Outstanding among its features is the heat exchanger with 42% more heating surface and a 10 year guarantee. The new-design blower, too, has a very large air moving capacity which enables it to operate *quietly* at slow speed. No metal-to-metal contact—the blower literally floats on soft yet tough rubber mountings.

Available in basement, vertical, counterflow and horizontal models, all adaptable to summer cooling with Stewart-Warner equipment.

...THE WINKLER *LP* LOW PRESSURE OIL BURNER

Famous for fuel savings as great as 50%

Noted designers have styled the LP Burner in the most modern manner...skilled engineers have developed *low pressure* operation to a peak of oil-burning efficiency. Under its sleek jacket is the most effective combination of design features ever devised for providing low-cost heating. The LP burner now includes the new Heat-Keeper, an exclusive, fuel-saving feature. Non-clog nozzle is guaranteed for 10 years.

•

Why not join up with an organization known for quality products, integrity of operation and permanence. Write today for information on the Stewart-Warner-Winkler Direct Factory Franchise...it could be the smartest move you've ever made!

Symbol of SW Excellence

STEWART-WARNER

HEATING AND AIR CONDITIONING DIVISION

Dept. H-80 Lebanon, Indiana

Roberts-Gordon

announces

A COMPLETE LINE OF OIL-FIRED BOILERS

"One for EVERY Home Heating Job"

ROBERTS-GORDON BOILERS offer all of the exclusive features necessary for ready customer acceptance. *Lifetime cast iron* boiler sections assure trouble free, low cost heating. "Wet base" construction maintains clean prime heat transfer surface for maximum heat transfer, minimum fuel consumption — a sure-fire sales point. All boilers are constructed in accordance with ASME and IBR Code requirements.

- SERIES 2GO HOT WATER AND STEAM BOILERS are specifically designed for hot water and steam service. Shipped complete with refractory combustion chamber. Tankless hot water heating coils available, if desired. 5 sizes in either hot water or steam from 113,000 to 252,000 BTU/Hr. output.
- SERIES GWO OIL-FIRED HOT WATER BOILER, with exclusive self-cleaning water tube construction. 4 sizes from 111,000 to 180,000 BTU/Hr. output. Hot water coils optional in larger sizes.
- FACTORY ASSEMBLED HOT WATER BOILERS, SERIES GWOA — shipped as a complete package, ready to install. Compact design. 4 sizes — 111,000 to 180,000 BTU/Hr. output. Hot water coils optional in larger sizes.

Investigate this complete line of nationally advertised, top profit, heating equipment today. Write today for your free copy of the new Roberts-Gordon catalog. Remember, Roberts-Gordon has just the right unit for your customers' requirements.

ROBERTS-GORDON APPLIANCE CORPORATION

ROBERTS-GORDON APPLIANCE CORP.
44 Central Ave., Dept. FL, Buffalo 6, N. Y.

Please send me full details on your complete line of Roberts-Gordon Boilers.

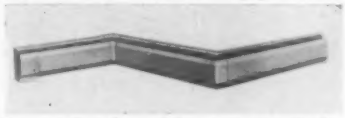
NAME_____

TITLE_____ COMPANY_____

ADDRESS_____ CITY_____ ZONE____ STATE_____

Crane introduces both residential and commercial baseboard Radiation

CRANE has announced Sunnybase radiation (illustrated) for residential applications and Sunnywall finpipe radiation for commercial and industrial heating requirements.



Sunnybase are non-ferrous baseboard heating panels for new or existing homes, available in three types, each equipped with 48 fins per ft.

Sunnywall radiation is furnished with a variety of enclosures and accessories to simplify installation. Catalog ratings on the numerous elements offered list both steam and hot water ratings.

Made by: Crane Co., Plumbing-Heating-Air Conditioning Group, Johnstown, Pa.

Lennox adds 3-ton down-flo cooling Coil; multi-purpose Unit for industrial Heating

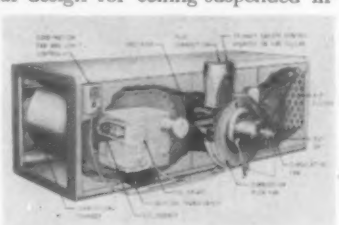
LENNOX is producing a nominal 3-ton down-flo cooling coil (illustrated), supplementing its 2-ton model. Designed for add-on application under a down-flo furnace, the 3-ton model includes an expansion valve and condensate eliminator. Coil is rated according to ARI Standard 210-58.

Lennox' OG4 is a dual-fuel industrial heater, which can be used as a central furnace, unit heater or duct furnace, installed for up-flo, down-flo or horizontal delivery. Two sizes are available which develop output capacities of 750,000 and 1,000,000 Btu/hr using No. 2 oil.

Made by: Lennox Industries, Inc., Marshalltown, Iowa.

Iron Fireman adapts Custom Mark II oilfired Furnace to horizontal Design

IRON FIREMAN'S Custom Mark II oilfired furnace is now available in a horizontal design for ceiling-suspended installation. Available in six capacities, with a bonnet output rating of 84,000 to 250,000 Btu/hr, the unit features volumetric combustion, requiring only a vent to handle exhaust gases.



Designed for No. 2 oil, furnace can be combined with a cooling unit.

Made by: Iron Fireman Mfg. Co., 3170 West 106th St., Cleveland 11, Ohio.

NEW THRUSH *float air vent*

Improves water circulation by eliminating air

FOR GREATER efficiency in water heating or chilled water cooling systems, install the new No. 8 Thrush Water Float Air Vent at all high points and any place where air may accumulate in the piping circuit. Pockets of air can stop circulation completely or impair circulation to such a degree that heating or cooling output is seriously retarded.

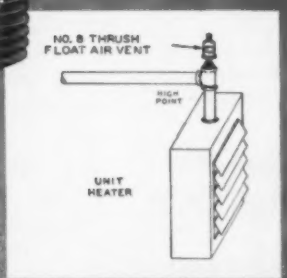
No. 8 Thrush Float Vent is a low cost, fast acting, high capacity vent suitable for up to 50 pounds working pressure. Has ⅛" I.P.S. male inlet and compression connector for ¼" O.D. overflow or waste connection as shown in diagram below. Stainless steel needle seals against a special composition seat ring assuring tight close at even lowest pressures. See your wholesaler today or write Dept. C-8.

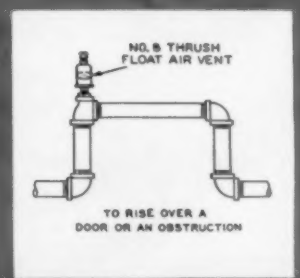
QUALITY HYDRONIC HEATING SPECIALTIES

H. A. THRUSH & COMPANY

PERU, INDIANA

ILLUSTRATIONS AT RIGHT SHOW SHOW SOME OF THE HIGH POINTS REQUIRING VENTING





White-Rodgers Detector

(Begins on page 67)

detector simply has the effect of turning on electric current for the relay coil when the detector "sees" a radiant oil flame . . . and cutting off the flow of current through the relay coil when it does not "see" the flame.

With the detector "seeing" no flame, its electrical resistance is astronomically high, up around one million ohms, with the result that practically no electric current goes through it—in effect it blocks the flow of current through the solenoid coil (of the combustion relay) wired in series with it.

Ordinary room light reaching the detector causes its resistance to drop to about 1,600 ohms. That causes the combustion relay to snap in, as this relay snaps in when the detector's ohms drop below about 5,000. Rays from oil flames, reaching the detector, drop its resistance to the range of 3,000 to 450 ohms . . . much below the minimum for snapping in the relay, giving great leeway, said to make for rugged, foolproof, practical operation.

The Kwik-Sensor flame-detector is mounted at the blower end of the gun tube of a gun-type oilburner—far from the flame, where it is in a stream of blower air, and where it does not disturb the pattern of blower air reaching the atomized oil sprayed into the firebox.

Instructions say that the new flame-detector can be applied to existing oilburners in a matter of minutes, using its standard mounting bracket. As it need be positioned only where it can pick up radiant rays from the oil flame, and as it can be far from the flame, it is said to have no exacting or critical mounting considerations.

Frank Crawford, White-Rodgers engineer, reports that to date only one burner manufacturer had to be asked to modify an oilburner to permit use of the Kwik-Sensor flame-detector. The burner had a Shell combustion head, Crawford says, and had a "solid, static disc" in its gun tube, behind the head. To permit sufficient light from the oil flame to reach the new flame-detector, a hole one-eighth of an inch in diameter had to be drilled in the "static disc."

Frank Crawford declares that the flame-detector carries only about 25% of the amperage for which it is suitable, and has a life expectancy of 10 to 15 years.

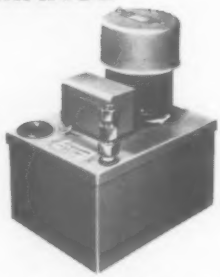
White-Rodgers points out that equipment manufacturers and dealers, starting to use the new control system, have no need to worry about complicated educational programs for sales, installation, and service personnel. Although providing instantaneous response, the new system is not electronic; it has no transistors, no electronic tubes. The primary control is made up of standard components, which are simply either low-voltage or line-voltage, familiar to and readily serviced by typical servicemen.

The new system is said to eliminate variables and complications of stack-mounted controls such as short smokepipes, stack temperatures exceptionally high or low, slow or uncertain response, draft-regulator interference, and the effects of soot on heat-sensitive smokepipe elements.

Eddington PRECISION ASSURES
RELIABLE PERFORMANCE

CONDENSATE PUMPS

For air conditioning, refrigeration and dehumidifying units. Effectively and dependably removes condensation. Compact, simplified automatic liquid level control. Pumps heads to heights of 20 ft. Height, base to top 10 inches.



NOZZLES

For reliable, smooth, trouble-free oil burner service, the new Eddington one-piece porous bronze nozzle filter is outstandingly reliable. It permits the flow to pass with the least restriction yet gives more effective filtering than 200 mesh strainers. Recommended for nozzle ranges from .50 gph through 1.00 gph and larger flows if desired.

FUEL OIL FILTER

Rust and corrosion proof diecast aluminum body. Felt cartridge. Large sump. Greater filtering surface area. Is interchangeable with other makes.

Eddington

High & Low Pressure Nozzles
•
Combustion Heads
•
Filters—Strainers
•
Condensate Pumps and Water Disposal Units
•
Pressure Regulating Valves
•
Nozzle Adaptors
•
Air Cones—Stabilizers
•
Servicemen's Kits
•
Inspection Mirrors

Our engineering department is at your service. Inquiries invited on your problems.

Eddington OIL BURNER ACCESSORIES *Nozzles*

EDDINGTON METAL SPECIALTY COMPANY, EDDINGTON, PENNSYLVANIA

Shell "Certified Comfort"
–the profit plan for fuel oil distributors

"Certified Comfort" is Shell's tried and proved program for building year-round volume and profits for fuel oil distributors. It has been skillfully designed to benefit both customer and dealer. Here's how it works:

1. Customer gets steady, efficient heating with Shell's super-refined oil, the modern fuel.
2. Special additives in Shell's premium-quality heating oil keep fuel filters clean.
3. Customer pays no more than for ordinary heating oil.
4. Customer is assured of premium service . . . including degree-day system deliveries, anti-corrosion treatment of fuel tanks and metered delivery receipts.
5. *For you,* a full-scale cooperative advertising program makes use of television, radio, billboards, newspapers and direct mail. Available to all distributors of Shell Heating Oils upon request.

Now's a good time for you to contact your local Shell representative. You'll get full details. And remember, the "Certified Comfort" Plan is the Profit Plan for Shell Fuel Oil distributors only.

SHELL OIL COMPANY

CERTIFIED COMFORT · SHELL · HEATING OILS

Public Relations Check List

(*Begins on page 72*)

——Are you fair in all settlements offered to your customers about their complaints?

——When you are at fault, do you quickly shoulder the blame instead of grudgingly making an adjustment for the customer?

——Do you live up to the spirit as well as the letter of all agreements you make with your customers?

——When dealing with a "chronic complainer" are you fair, but firm?

Vendor Relations

——Do you make it a point to see and examine the merchandise of every salesman calling on you?

——Do you treat visiting salesmen as friends rather than as business enemies?

——Do you avoid any criticism of the supplies and equipment being presented by the salesmen?

——Do you offer suggestions that might lead to some improvement of the salesman's line?

——Do you avoid all sharp-trading practices such as asking for unusual terms and special discounts?

Creditor Relations

——Do you pay all invoices as promptly as possible within the dating allowed?

——Do you take only the discounts allowed on the invoice instead of misinterpreting the terms?

——Are you fair in seeking credits and adjustments for the heating equipment and supplies you received?

——Do you recheck carefully on any errors that seem to indicate a difference in invoice amount and the amount received?

——When it is necessary to delay payment of an invoice for some reason, do you inform the vendor of the situation?

Credit Accounts

——Do you explain all your rules and regulations about your credit plan to your customers when the account is opened?

——Do you handle poor credit risks in a tactful manner to avoid any ill will with other customers?

——When obtaining credit information from a customer, do you make sure that the questions you ask are not embarrassing?

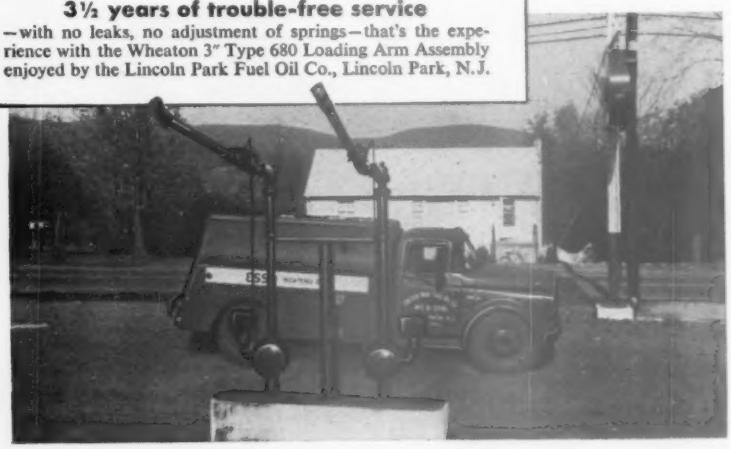
——When following-up overdue accounts, do you have a system that still holds the good will of these slow paying customers?

——Do you give your customers every opportunity to make some plan of settlement before taking drastic action on your charge accounts?

Good common Sense

These fifty questions will give you a cross-section of your fueloil business' public relations program. All are important to the future success of your business and all have a bearing on the opinion the public will have of your business. By applying good common business sense to any areas that show a weakness, you can improve your public relations in your own community for your fueloil business.

3½ years of trouble-free service
—with no leaks, no adjustment of springs—that's the experience with the Wheaton 3" Type 680 Loading Arm Assembly enjoyed by the Lincoln Park Fuel Oil Co., Lincoln Park, N.J.



You can load faster and cut maintenance costs with Wheaton Loaders

The Wheaton Type 680 Loader is "made to order" for the user who requires easy, fast operation and extremely low maintenance cost.

Users of this equipment have the same experience: complete freedom from leaks...even after years of service.

This Wheaton Loader is rugged—yet so easy to operate that it pays for itself in the time it saves.

Another economical installation of the Wheaton 4" Type 680 Loader—at the Woolley Fuel Oil Co., Maplewood, N. J.

Single spring balance holds the assembly in operating position, and when loading is completed pre-set spring carries the assembly to any desired angle from 10° to verticle.

Start your fuel oil deliveries with the fast-loading Wheaton Type 680—the *proven* way to save time, maintenance and money. Write today for details.

WHEATON BRASS WORKS, UNION, N. J.
Distributors in all principal cities

Wheaton LOADING ARM ASSEMBLIES

BOOST FUEL OIL DELIVERY by 10%

add stops-per-day

NEW BUCKEYE NOZZLE...SWIVEL...for low pressure-drop at high capacity

No. 125 FUEL OIL NOZZLE

Available with either 1¼" or 1½" IPT inlet—with or without tube and with or without integral check valve

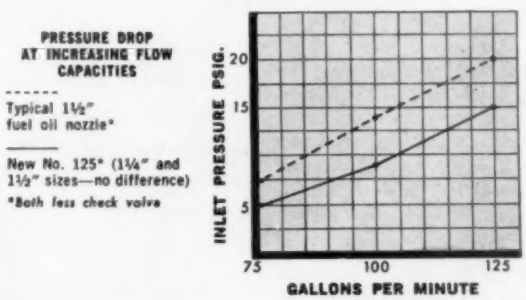
- Less than 10 lb. drop at 100 gpm.*
- Higher lift, seat diameter larger than outlet tube.
- Designed for 125 gpm flow rate.
- Easy to open, easy to close because of hydraulically balanced design. No hammer or chatter.
- 4-notch replaceable guard permits easy control.

Tested on nozzle without internal check

No. 126 SWIVEL. Available in 2 sizes—1¼" and 1½"

- Fully repairable: remove plug and ball bearings. Bearings and quad-ring seal easily replaced.
- Teflon and ball bearings for easy operation.
- Full pipe size opening at both ends. Female portion of swivel (hose end) is larger than hose coupling—easy to attach and detach.
- Increases hose life. Prevents kinks, twists and damaging tension. Allows hose and valve to turn independently.
- Permanent lubrication of bearings; grease-sealed at factory.

To you, time is money — and increased delivery capacity of your equipment adds to the number of stops your trucks can make per day. This new Buckeye combination is the only such system designed to give you low pressure drop at flow rates up to 125 gpm—virtually an "open pipe" system. Write for more information or contact your Buckeye distributor.



Buckeye **BUCKEYE IRON & BRASS WORKS**
Box 883 • Dayton, Ohio

Readers' Problems

(Begins on page 84)

Q. I enjoyed the test by John W. Schulz on commercial oilburners in your March issue, but I am not in complete agreement with some of his answers.

Please see Question 3 and answer "A." How can a pump develop vacuum with air leaks in the suction line?

See Question 5, answer "D." You definitely say the boiler is underfired. Although the stack temperature is high, certainly a burner with larger capacity and more efficient air delivery would help.

I am a domestic oilburner man becoming interested in commercial burners, but as yet I have no real experience.

S. F., Staten Island, N. Y.

A. Thanks for your interest and your intelligent discussion of the two questions you pinpoint.

With respect to Question 3, fortunately a pin-hole leak in the suction line of a 70 gph burner does not prevent burner operation. An oil pump that's wet inside with fueloil can handle air to a certain degree.

Oilburners which have two-stage pumps (including pressure burners having two-stage fuel units, and commercial-industrial burners having two pumps located in large oil reservoirs) do especially well at continuing to run normally even though suction lines have slight air leaks.

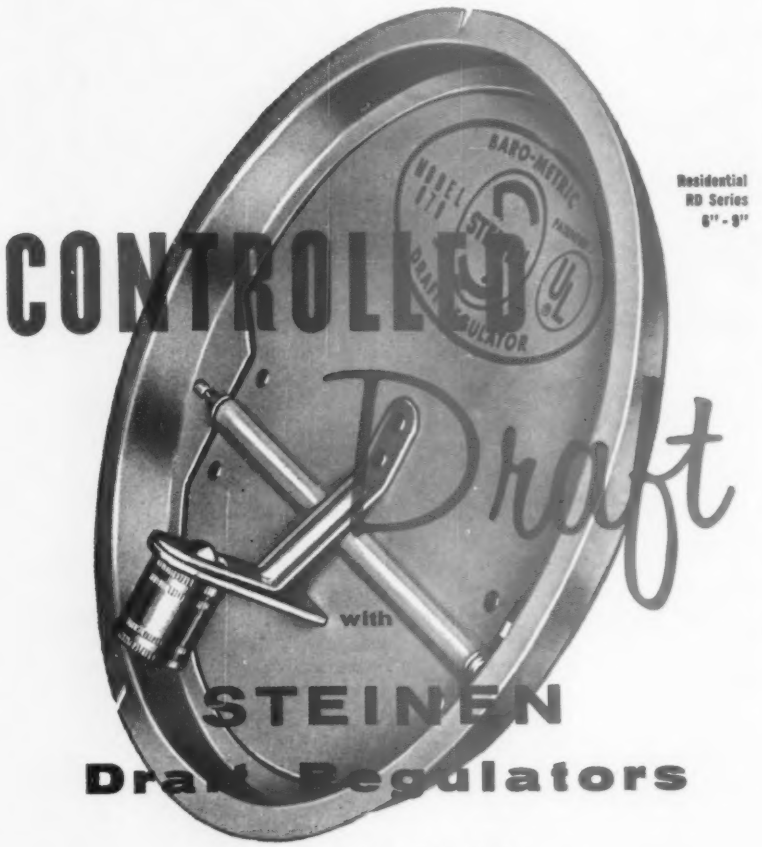
Thus a pump definitely can develop a vacuum although its suction line has an air leak. If the leak is bad enough, it's possible that a burner on a particular installation will produce a small flame that splutters and almost goes out every few minutes. The question explains that on the trouble job the burner misbehaved in that fashion.

About Question 5, yes, more efficient air delivery would help—if poor delivery of air into the firebox and flame is causing the CO_2 reading to be only 9% while the smoke is No. 3. But matter of degree is involved, so ending the trouble depends on by what percentage could the output of the boiler be increased by possibly upping the CO_2 to about 11% or 12%, and reducing the smoke reading to No. 1 or 2.

The burner is rated for 60 gph, the question stipulates, but can be fired only at 35 to 45 gph. That seems to rule out trying to end the trouble by installing a burner of higher capacity; the full 60 gph of the installed burner cannot be used.

The question asks specifically what is needed to obtain 50% more steam than this boiler is producing. Fired reasonably well (the 9% CO_2 and No. 3 smoke indicate that), this boiler is giving a stack temperature reading of 940°F. The stack temperature already is greatly excessive. Therefore the reasoning is that the boiler certainly cannot be fired harder to the degree that causes it to produce the 50% greater output needed here.

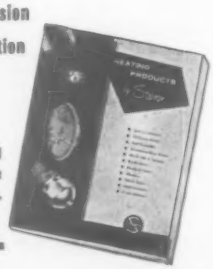
Your thought about greater combustion volume being needed is excellent! As more fire cannot be put into this boiler without the production of excessive smoke, and as the stack temperature is 940°F., it would seem that the combustion space of this boiler is packed full of all the flame possible.



Residential
RD Series
6" - 9"

- One Calibrated Scale
- Push-Pull Slide Bar Control
- Single Point Gate Suspension
- One Piece Gate Construction
- Factory Pre-Set
- UL Approved

Steinen Draft Regulators are also available in Commercial 12"-32", Duo-Check for coal and for gas-fired and fuel-less Incinerators. Steinen also manufactures Oil Burner Nozzles, Electrodes and Heating Accessories.



WRITE today for illustrated catalog showing complete line of Steinen heating products.

STEINEN

WM. STEINEN MFG. CO.
HEATING PRODUCTS DIVISION — DEPT. A-8
43 Bruen St. • Newark 5, New Jersey

only this much more

buys this much difference

The little extra you pay for Purolator filters buys features and performance you just don't get in ordinary filters. The picture shows you the difference; here's what this difference means to you:

❶ Nozzles last longer because the Purolator Micronic element filters out abrasive particles as small as 0.0005 of an inch. A waste-type filter medium, no matter how much it's compressed, simply can't filter that fine, even when it's new.

❷ Filters last longer (a year or more without servicing) because every Purolator filter has over 200 square inches of filtering surface, enough to filter over 7,000 gallons of fuel oil without replacement.

❸ No channeling or unloading, ever, because the Micronic element is precision made from a single pleated sheet of resin impregnated cellulose that resists water and acid, won't shrink, stretch, distort, flake or deteriorate.

❹ No spillage, no air leaks. The depressed head on the Purolator housing eliminates spillage when servicing. The recessed gasket seal makes an airtight fitting between case and head.

And because Purolator filters filter better, longer, you make fewer trips, have fewer problems fulfilling your service contract. For full information, write to Dept. 2577.

Filtration For Every Known Fluid

PUROLATOR

PRODUCTS, INC.

RAHWAY, NEW JERSEY AND TORONTO, ONTARIO, CANADA

fueloil & oilheat

Q. Several of your recent articles covered the idea, in connection with experimental oilburners, of having the products of combustion go outdoors through small pipes, 1" to 2" size, that terminate just outside basement walls. Experimentally, I'm proving in a few homes that this can be done with ordinary, modern, oilfired furnaces, .65 gph nozzles, 450°F. stack temperatures, 12% CO_2, zero smoke. It's simple—all I use is a 3450 rpm, 1/6 hp motor driving a suitable, powerful blower that draws gases from furnace's smoke outlet and pushes them outside through a 1½" pipe.

One factor is the oil flame might get out of adjustment some time and smoke and fumes pour out of the house at ground level. Are air filters or water-washers in production to prevent this?

H. N. E., Meriden, Conn.

A. No, such equipment is not in production. Consider using, for your experimental installations, electric-eye equipment made for the smokepipes of commercial and industrial installations. Already in production and used widely, such equipment can sound an alarm, and shut down a burner, if the haze or smoke traveling through a smokepipe (or one of your small exhaust pipes) exceeds the level you select. Such electric-eye equipment is not inexpensive. But air filters and air washers of the kind you are seeking would cost quite a bit of money.

Q. Does adding a delayed-opening solenoid shut-off valve to a pressure burner reduce fueloil consumption?

G. C. N., Green Bay, Wis.

A. Yes, it does—by providing cleaner starting and stopping of the oil flame, thus keeping the furnace or boiler flues cleaner in general than they'd be if such a valve were not used. The savings are greatly different on different installations, for the accumulation of a certain amount of soot wastes much fueloil on some jobs, but little on other jobs.

Such a valve does not reduce fuel consumption greatly. Probably on no installation does it reduce oil bills by as much as 10%. To install it is worthwhile, however, because in addition to providing much cleaner starting and stopping of the flame, it gives the burner the added dependability of having two nozzle-line shut-off valves instead of one.

Q. The direct-expansion air-cooling coil above this furnace froze up, got broken up and was made to leak by the heavy ice formation. All told the mess and expense were awful. Repaired, cleaned up, and serviced thoroughly, the cooling system performs well and as it should. We'll thank you to tell us what could cause this trouble, as we don't want to have to go through this again on a new job.

B. E. R., Massillon, Ohio

A. Chances are greater than nine out of ten that clogging of the system's air filters reduced the flow of air through the cooling coil and caused the damage. Less probably, the circulating blower slowed down with the same results. Make certain to check the low-side pressure control of the refrigeration system. It may be adjusted to stop the compressor at too low a pressure.

You'll be amazed!

V&E SCHUYLKILL HAVEN, PA.

THERM-OVAL TUBE

PACKAGED BOILER UNIT

√ COMPETITIVELY PRICED

√ BUILT TO PERFORM

PACKAGE Includes:

Boiler, Built-in Combustion Chamber, 3 G.P.M. Coil, Jacket & Thermo-Altimeter, Burner, Nozzle, Primary Control, Thermostat, and 3-Way Aquastat Relay, Circulating Pump, Flo Control Valve, A.S.M.E. Relief Valve, and Draft Regulator.

ASME CONSTRUCTION AND ASME LABEL.
FLUSH AND EXTENDED JACKETS.

Packaged, Wired, and Assembled. Ready to Go!

Exceptionally High Quality, LOW PRICE. Write us — You'll be GLAD You Did!

V&E SCHUYLKILL HAVEN, PA.

V. & E. PRODUCTS INC.

SCHUYLKILL HAVEN, PENNA.

The Choice Was UNANIMOUS!

This is the Birchwood Development . . . a residential area of moderately priced homes.

In Every Home . . . an EXTROL EXPANSION TANK and AIR PURGER

Joe La Vallee

Fred Ardente

Says the BUILDER . . . Dick La Chance of La Chance Enterprises ". . . Heating is one of the most important features in selling homes in New England and hot water heat is preferred over any other type. We will build 90-100 homes in 1960 in the $13,000-$14,000 class, and we find that by an intelligent selection of materials we can give our customers more for their money, have the houses sold before they are finished and make a good profit. The American EXTROL combination fits right into this picture."

Says the CONTRACTOR . . . Joe La Vallee of J. W. La Vallee & Sons ". . . We are always looking to save labor and make sure we install equipment we don't have to keep going back to service. The American EXTROL Expansion Tank and Purger combination has been the greatest thing for us in a long time."

Says the SUPPLIER . . . Fred Ardente of Ardente Supply, Inc. ". . . Our first duty to our customers is to make certain we supply them with the best quality, trouble free systems at prices that will keep them competitive and in business. The Extrol unit meets both of these demands."

What's The Secret of EXTROL'S *Success?*

Usually in hot water heating systems, the boiler water gradually absorbs the air from the expansion tank, resulting in air problems and waterlogging. The EXTROL Expansion Tank however prevents this by providing a sealed flexible diaphragm *between* the water and the air so that the two never come in contact.

The result . . . trouble-free, noiseless operation — with *lower* installation costs!

Ask For FREE Details.

We'll be glad to send you an illustrated brochure that describes in detail the unique advantages of the Extrol Pressurized Diaphragm Type Expansion Tank. Write:

American TUBE & CONTROLS INCORPORATED
West Warwick, Rhode Island

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Manufacturers of Hydronic Controls, Tankless Heaters, Tube Hangers and other Quality Plumbing and Heating Accessories.

Q. Other oilburner dealers seem to have been lucky enough to find only gas-designed warm-air furnaces they could convert to oil, when they entered gas-heated homes and wanted to sell oilburners and fueloil. But me, I often encounter high-up gas-fired combustion chambers, that must be air-cooled by air flowing around their bottoms and their sides, which are about 20" long and only about 6" wide inside. Were I to apply refractory only 1" thick to each side of these to form the refractory fireboxes I need for my gun burners, I'd have firebox inside width of only 4". That's not enough! Have you available any plans for applying a gun burner to a gas-designed combustion space only 6" wide and 20" long?

A. V. N., Jamaica, Long Is., N. Y.

A. Sorry, we have no such plans for you. But if any come in as the result of the publication of your letter, we will forward them to you. Probably you are frustrated as the result of reading the letter from a reader which appeared on p. 40 of the October 1958 issue of FO&OH, as the writer of the letter declared that in 35 years of business he has not found a domestic gas job he could not convert to oil.

Q. Many arguments are advanced in favor of keeping circulating blowers of forced-air heating systems running continuously all day when heat is needed. I don't agree entirely because I've had complaints about cold air coming from supply registers where I tried using the idea. Anyhow, if the continuous air-circulation idea has such great value, why not wire a 24-hour time-switch and an outside thermostat in series with each other, and wire both in parallel with the bonnet fan control switch? Fix things so that the blower runs continuously from, say, 7:30 AM to 10:00 PM, if the outside temperature is below, say, 50°F.

L. F. O. B., Medina, Ohio

A. The use of the arrangement you describe certainly would make for needless expense, for the bonnet control already on the furnace does a far better job of starting and stopping the circulating blower. The arrangement you suggest using would keep the blower running even if the furnace became cool for any reason.

First, aim to use the lowest gph firing rate that heats the house properly on coldest mornings, where this is feasible (that is, don't use such a low-capacity nozzle in a pressure burner as to invite chronic nozzle trouble; some servicemen dislike nozzles of lower capacities than, for example, .75, .65, or .60 gph).

Second, reduce air circulation to the degree that the temperature rise through the furnace is relatively high, perhaps 100°F. to as high as even 130°F. with the burner running steadily for an hour.

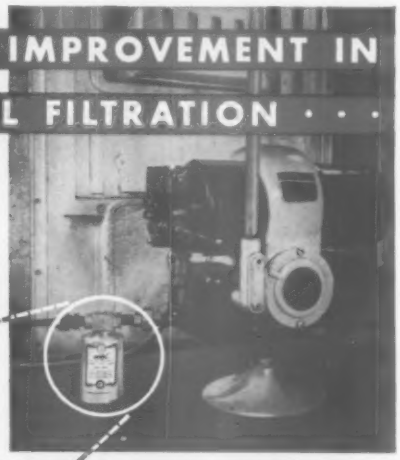
Third, adjust the room thermostat for short oilburner "on" periods of about six to eight minutes.

Fourth, set the fan control on the bonnet so low that setting it any lower will cause supply registers to emit air that the occupants complain is cold air. On certain installations, occupants complain of cold air from supply registers, if air below 110°F. or 120°F. comes from these registers.

THE GREAT NEW IMPROVEMENT IN OIL BURNER FUEL FILTRATION . . .

wix®

SPIN-ON TYPE OIL BURNER FILTER



OIL BURNER FUEL FILTER OBF-100

This revolutionary, *new* WIX Oil Filter easily replaces *all* comparable standard fuel oil filters . . . makes cartridge servicing simpler and more profitable. Just a "twist-of-the-wrist" does it—no tools, no filter pot to clean out! It's the self-contained unit that brings new efficiency and new economy to every oil burner operation.

- Exclusive POROSITE pleated paper filtrant
- Over 228 square inches of filtering surface
- Removes even microscopic contaminating particles
- Guaranteed to exceed 120 gph gravity flow
- COMPACT! 5-9/16" high, 2-3/4" wide, 8 ounces
- Listed as Standard by Underwriters Laboratories, Inc.

Install this WIX Fuel Filter on all the burners you service or install—speed up your maintenance, increase your profit margin. Merely insert the die-cast aluminum head in any ⅜" N.P.T., one or two pipe (high or low pressure) oil burner system and . . . SPIN-ON the WIX Filter Cartridge! That's all there is to it. From then on, servicing requires only changing the Cartridge—no mess, no trouble, no time wasted—spin-off and discard the old—SPIN-ON the new!

Head and Filter are constructed of lightweight, rust and corrosion-proof aluminum with the Head featuring an *exclusive* air bleed and a safety locking screw. WRITE, today, for details on how this great, new WIX "SPIN-ON" Fuel Filter can work and make money for you!

REPLACEMENT CARTRIDGE OBC-100

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...YET IT'S A COMPLETE TRUCK METERING SYSTEM IN ONE WEIGHT-SAVING COMPACT

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for a better measure of profit

Everything you need for accurate metering of fueloil or gasoline is built into one weight-saving unit in Neptune truck meters: an efficient air-release to remove slugs of air, a large capacity strainer to prevent dirt stoppages, a time-saving automatic quantity control valve, and confidence-building ticket-printer.

Only Neptune gives you all these in so little space, with so much saving in weight. Only three connections to make. No "extras" to buy . . . fewer chances for leaks . . . less chance for improper installation.

Most important . . . all these important accessories are *designed* by Neptune, *assembled* by Neptune, and *calibrated as one unit* by Neptune.

Add Neptune's splendid reputation for sustained accuracy and low maintenance, and you have the oil marketer's most sought-after business friend. All sizes. Ask your Neptune Equipment Jobber or tank truck manufacturer for details.

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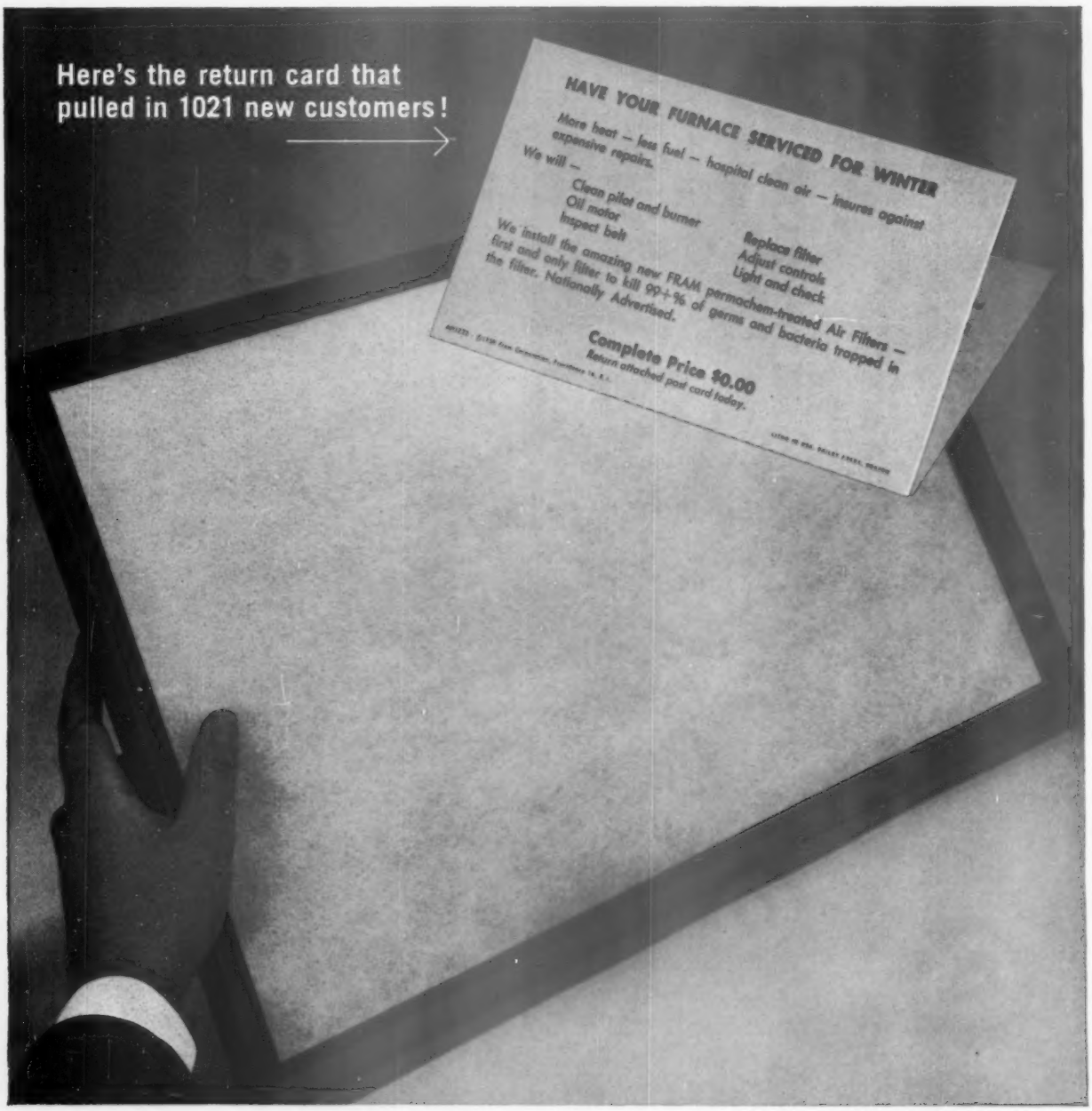
LIQUID METER DIVISION

Wichita heating and cooling new customers from one FRAM® permachem


Here's the return card that pulled in 1021 new customers!
HAVE YOUR FURNACE SERVICED FOR WINTER
More heat — less fuel — hospital clean air — insures against expensive repairs.
We will —
Clean pilot and burner
Oil motor
Inspect belt
Replace filter
Adjust controls
Light and check
We install the amazing new FRAM permachem-treated Air Filters — first and only filter to kill 99+% of germs and bacteria trapped in the filter. Nationally Advertised.
Complete Price $0.00
Return attached post card today.

service contractor gets 1021 mailing that features -treated Air Filters!

Proof you can boost service business with amazing FRAM Filters that kill 99+% of germs trapped!

Here's how Sappio Heating and Cooling Company of Wichita, Kansas, used the benefits of FRAM permachem-treated Air Filters to greatly increase service sales.

In the summer of 1959, owner John Sappio picked 3,000 names out of the Wichita Telephone Book. These names were used for a mailing featuring FRAM permachem-treated Air Filters — the "first and only filter to kill 99+% of germs and bacteria trapped in the filter."

Result:
1021 new service customers in just two weeks!

Mr. Sappio reports: "This is the largest return we ever got on a service mailing. We attribute this to the extra benefits guaranteed our customers by these FRAM Filters."

Bonus: a large number of furnace replacement sales by Mr. Sappio's crew during service calls — and several air conditioning replacement sales this Spring to these same customers!

You can boost *your* service business by installing and promoting FRAM permachem-treated Air Filters. Only FRAM Filters offer your customers all these benefits . . .

- Kill 99+% of bacteria, mold, mildew trapped in the filter!
- Stop musty filter odors!
- Keep air hospital-clean!
- Trap dust, dirt, pollen!
- Need no oil!
- Exclusive anchor-locked frame cannot settle, vibrate, blow, or soak loose!

You can't miss with FRAM Air Filters! Mail this coupon today . . .

Guaranteed by Good Housekeeping

BY FRAM
permachem-treated
AIR FILTERS
FOR HEATING
FOR COOLING

FRAM *Aire Corporation*
Division of FRAM Corporation, Providence 16, Rhode Island

FRAM Aire Corporation
Division of FRAM Corporation
Providence 16, Rhode Island

Yes, I'm interested in the profit-making opportunity offered by FRAM permachem-treated Air Filters. Send me complete information, and name of my nearest distributor.

NAME .....

ADDRESS .....

CITY ..... STATE .....

I-B-R annual Meeting stresses research, education Programs

RESEARCH and education programs were emphasized at the annual meeting of the Institute of Boiler and Radiator Manufacturers held June 7-9 at Absecon, N. J.

Both Joseph J. Decker, president, Plumbing and Heating Division, American-Standard, and Wesley A. Songer, president, Crane Co., predicted that consumer demand for hydronic systems would be expanded.

Officers elected at the recent meeting of the Institute Boiler and Radiator Manufacturers are shown from left to right: John E. Reed, Sterling Radiator Co., vice chairman; D. J. Quinn, Plumbing and Heating Division, American Radiator and Standard Sanitary Corp.; M. C. Reed, Dunkirk Radiator Corp., retiring chairman; and R. E. Ferry, general manager of the Institute.

R. E. Ferry, general manager of the Institute, reported that shipments of cast iron heating boilers in the first quarter of 1960 showed a 15% increase over the first quarter of 1959 and a 30% increase over the first quarter of 1958. He also announced that membership had increased from 58 to 68 companies in the last year.

Reporting on the I-B-R research house on the University of Illinois campus was Professor Warren S. Harris.

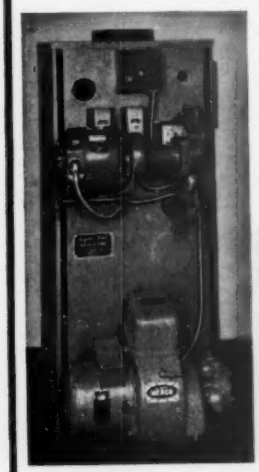
It was announced that some 20 schools have been scheduled for 1961. This is the tenth anniversary for these Hydronic heating schools. During this period 231 schools have been held and the total attendance has been 13,007. Methods of proper calculation, design and installation are taught.

New officers of the Institute are pictured. Serving with them on the executive committee are T. L. Arnold, Fedders Corp.; R. H. Bohr, Federal Boiler Co., Inc.; M. M. Brooks, Slant-Fin Radiator Corp.; V. A. Good, Burnham Corp.; F. S. Hudson, Jr., Crane Co.; H. E. Kritzer, Sr., Kritzer Radiant Coils, Inc.; R. G. Pinkerton, Peerless Heater Co., Division of Eastern Foundry Co.; M. C. Reed, Dunkirk Radiator Corp.; S. K. Smith, The H. B. Smith Co., Inc., and E. R. Westphal, Weil-McLain Co.

VALUE
QUALITY and
SERVICE

You get standout quality and value at competitive prices . . . plus factory guarantee and service on every unit. Every unit comes complete in one package, factory fire tested, ready to install. You make more profit, get more satisfaction out of every Herco installation. Complete line of Oil Burners, Boilers and Warm Air units.

A TYPE AND SIZE FOR EVERY INSTALLATION.

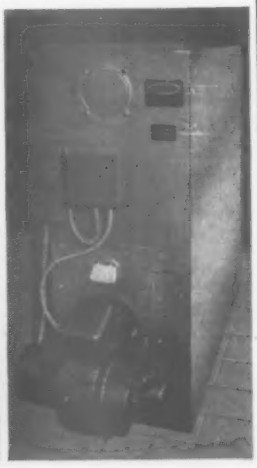


OIL BURNERS—Firing rates 0.5 to 20 gph.

BOILER BURNER UNITS—8 sizes, 115 to 840,000 BTU.

HOT WATER SUPPLY BOILERS —7 sizes, 100 to 1000 gph.

WARM AIR FURNACES—12 models, completely assembled.



IMPROVE YOUR BUSINESS . . . learn more about Herco products. A letter brings free catalogs and a chance to see-for-yourself. Herco Oil Burner Corporation, Lancaster, Pa., U.S.A.

OIL THRIFTY
HERCO
OIL

Lockard named ESPA Secretary annual Convention set for Fall

CHARLES A. LOCKARD has been elected secretary of the Empire State Petroleum Association, succeeding the late Harry B. Hilts. Lockard, who was assistant director of marketing for the Eastern District, Petroleum Administration for War, during World War II, had been assistant secretary of ESPA since February, 1946. Robert A. Stromberg will succeed Lockard as assistant secretary of the Association.

Lockard announced that M. E. Spaght, executive vice president of Shell Oil Company, will be guest of honor and principal speaker at the banquet closing ESPA's 20th annual convention this fall. The meeting will be held at New York City's Hotel Astor, October 16 through 18.

Maine Oil & Heating Dealers hold sixth annual Convention

THREE HUNDRED oil dealers, suppliers, industry representatives and guests attended the sixth annual convention of the Maine Oil & Heating Equipment Dealers' Association, held June 14 and 15 at the Hotel Samoset in Rockland, Maine.

Kenneth R. Gifford was elected president of the association. Other officers named were: Richard A. Morrell, vice president; Cornelius K. Clauson, vice president; Leland O. Ludwig, Jr., secretary; John P. Cullinan, treasurer; Donald H. McGovern, executive secretary. Directors elected were: Louis P. Bail, Franklin L. Beal, J. Bart Conners, Louis B. Cook, Roland A. Genthner, Hubert R. Golding, William T. Johnson, William C. Kilroy and H. Allen Mapes.

Steel Boiler Institute makes revised Rating Code available

THE EIGHTH EDITION of the SBI Rating Code has been published, it was announced by the Steel Boiler Institute. It has an entirely new section covering the ratings for boilers which are mechanically-fired with mechanical draft.

E. J. Grady, Pacific Steel Boiler Division, has been re-elected board chairman and president. Fred S. Hudson, Jr., Crane Plumbing-Heating-Air Conditioning Group, and R. A. Locke were named vice president and secretary-treasurer respectively. Directors elected were T. S. Cliff, Terre Haute Boiler Works Co., A. T. Davies, Birchfield Boiler, Inc. and Frederick V. Hebard, International Boiler Works.

BODA annual fueloil Marketing Symposium planned for Oct.

THE THIRD annual fueloil symposium of the Burning Oil Distributors Association, Chicago, will be held October 23 through 27 at the Grand Hotel, Point Clear, Ala., Chester F. Bieschke, president, announced. A program covering the current and emerging problems and challenges in the marketing of heating oils is planned.

Hotel and transportation reservations will be handled through the BODA office.

FEATURE AFTER FEATURE
...BY FAR THE FINEST!
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FUEL OIL FILTERS
• Exclusive CHEMISTONE® Elements
• Choice of Glass or Metal Bowls
• 17 Models
• Shut-Off Valve (Optional)
The many exclusive customer-pleasing features that you get in Klemm Fuel Oil Filters are positive evidence of quality construction and performance. Repeat sales assure you of lucrative and continued earnings. For safety, economy of operation and trouble-free performance, you'll find it pays to recommend and sell Klemm Filters. See your jobber . . . or write direct.
CHEMISTONE—Genuine filter, not a mere strainer! Traps moisture . . . removes dust, rust and scale to 1/14,000 of an inch.
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DIVISION OF
KLEMM AUTOMOTIVE PRODUCTS COMPANY
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EXPORT: Guiterman Co., Inc., New York 4, N. Y.
Model FF-538-V—⅜" opening
For: Central heating plants.
Model FF-438-S—⅜" opening
For: Central heating plants.
Model 1R-88—¼" opening
For: Space heaters, floor furnaces, etc.
*Model PK-158—¼" opening
For: Space heaters, floor furnaces, etc.
*Model FF-438—⅜" opening
For: Central heating plants.

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For Immediate Shipment

Check items you are interested in. Attach to your letterhead, mail for information, prices, FREE SAMPLES:

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Serving 20,000 Petroleum Firms Over 30 Yrs.
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Canada's OHA elects President; will use OHI Direct Mail pieces

D. J. BROOKER was elected president of the Oil Heating Association of Canada, to succeed C. M. Coutlee of Ottawa. Coutlee will continue as a director on the national board. Brooker has been closely identified with OHA activities for many years, first as a director, later as secretary-treasurer and then as vice president.

OHA will soon make available to its members a "Treasury of Advertising" which will incorporate, under a licensing agreement, many of the direct mail pieces originated by Oil-Heat Institute of America.

Jobber and dealer management Workshops scheduled by NPA

TWO WORKSHOP SESSIONS, one beginning August 17 for jobbers and the other starting August 21 for dealers, have been arranged in Duluth by the Northwest Petroleum Association.

This is the first time that a dealer management workshop has been tried in this area.

Long Island Oil Heat Institute appoints Byrne Secretary

THE APPOINTMENT of George F. Byrne as executive secretary of the Oil Heat Institute of Long Island was announced recently by Leonard Braun, president.

Prior to his appointment, Byrne directed the maintenance and capital campaigns for the Nassau and Suffolk County division of the Salvation Army. He was also director of clinical operations for the United Cerebral Palsy, Nassau County division and public relations and campaign director for the Nassau division of the Boy Scouts of America.

Heating, Airconditioning Show set for Chicago, February 13-16

LARGEST DISPLAY of heating, ventilating, airconditioning and refrigerating equipment ever assembled is promised for the 15th International Heating & Air-Conditioning Exposition at the International Amphitheatre, Chicago, February 13-16.

The Exposition will be held under the auspices of the American Society of Heating, Refrigerating and Air-Conditioning Engineers in conjunction with its national meeting. The International Exposition Co., 480 Lexington Ave., New York 17, N. Y., will manage the show.

J. L. Maloney named President by Clay Flue Lining Institute

JOSEPH L. MALONEY, Eastern District Sales Manager, Natco Corp., Pittsburgh, Pa., has been elected president of the Clay Flue Lining Institute, an association of clay flue lining manufacturers. He succeeds James L. Clough, Evans Brick Co., Uhrichsville, Ohio.

CFLI reelected A. R. Thorson, Mill Hall Clay Products, Vice President; L. E. Hoyt, Worthington Ceramics, Secretary; and Philip E. Kopp, Malvern Flue Lining, Inc., Treasurer.

Add a "HANDYMAN" to your furnace cleaning crew for bigger profits!

The NEW, MODERN SPACE-SAVING GENERAL HANDYMAN POWERVAC FURNACE CLEANER

Check all these "HANDYMAN" exclusive features:

- SPACE-SAVING MODERN DESIGN
- ONE MAN OPERATION
- SELF CLEANING FILTER BAGS
- FAST ALL WEATHER OPERATION
- LOW MAINTENANCE
- 75 Cu. Ft. SOOT HOPPER
- CONVENIENT HOSE STORAGE
- 2 EASY-TO-REACH TOOL BOXES

Get your share of the profitable furnace cleaning business with a minimum investment that insures big returns. The General "HANDYMAN" Furnace Cleaner is built with more power (up to 40 H.P.) and greater capacity than any other cleaner available today. Now...All residential, commercial, institutional and industrial heating system cleaning jobs can be done with ease at a maximum profit.
Investigate all the features and advantages of the General "HANDYMAN" Powervac Furnace Cleaner before you buy furnace cleaning equipment for your shop. Send for our *Profit Portfolio* with complete information and prices on the "HANDYMAN" and other General Furnace Cleaners. Do it now . . . and start profits rolling your way from more cleaning jobs, more repair jobs and more replacement part sales for a profitable 1960.

Phone, Wire or Write Today
INdependence 3-5127
Wm. W. Meyer & Sons
8261 Elmwood Ave., Skokie, Illinois

Do you know the answer to this question?

Q. Which is taxed at a higher rate—

a fur coat?

OR gasoline?

A. The tax rate on gasoline is almost 5 times as high!

Some other "gasoline tax" answers you should know!

Q. What's the average federal and state tax on ten gallons of gasoline?

A. About <u>one dollar</u>!

Q. How much have gasoline taxes increased in the last ten years?

A. About <u>51%</u>! (But the price of gasoline itself has only increased 5.5%!)

Gasoline's a buy...only the tax is high!

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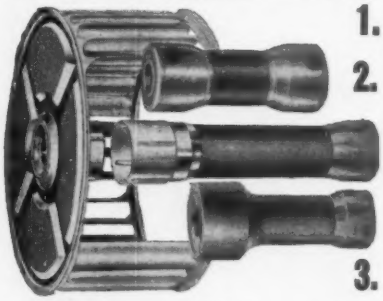
Guardian —

YOUR BEST SOURCE FOR ALL TYPES OF FLEXIBLE COUPLINGS



1. Set Screw Dept. F-70, 12 **2.** Splined Type **3.** Jaw Type

Only Guardian gives you these features—

- ROLL SPINNING — Exclusive process joins all three components at one time — while in final operating alignment.
- BRAIDED RUBBER—Ground to absolve true concentricity. Furnished in BUNA-N TUBE and NEOPRENE COVER. Lateral and angular alignment requirements fully met.
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Write for free descriptive literature covering couplings, service men's coupling kits, oil valves and Quik Joint compression fittings.

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COUPLING DIVISION
Dept. F-86, 1215 E. Second Street, Michigan City, Ind.

Revised electric Ordinance won by Newark fueloil Group

THE ESSEX County Fuel Oil Dealers Association has been instrumental in obtaining an amendment to the Electrical Code of the City of Newark.

This became effective on June 2, 1960, and permits oil burner installers to apply directly for their electrical permits without the necessity of hiring licensed electricians.

Western Massachusetts Council has Engineer to aid Builders

HAROLD K. RICKER has been appointed by the Oil Heat Council of Western Massachusetts, Inc., Springfield, Mass., as its consulting engineer to assist architects, builders and building committees in specifying oilheating equipment.

Thus, the Council is making available to the Springfield-Holyoke building industry an engineer and expert on heating. He is a graduate of the Lowell Institute, affiliate of the Massachusetts Institute of Technology and has been associated with the heating industry for nearly 30 years.

Ricker represented Gilbert and Barker Manufacturing Co. on various assignments with major oil companies in Europe, Canada, Australia and the United States. He has served on various committees of the Oil-Heat Institute of America and is the co-author of the "Handbook of Oil Burning" published by the Institute.

OHI Sponsors technical Course for Servicemen in N. C.

A COURSE sponsored by Oil Heat Institute of America and the North Carolina Oil Jobbers Association for oilheating technicians and servicemen was held recently in Charlotte, N. C.

Lecturers were Robert Gilmartin, Gulf Research and Development Co.; Stanley Czarnecki, Jr., Eddington Metal Specialty Co.; John Nelson, Sundstrand Hydraulic; Burt Vickery, Bacharach Industrial Instrument Co.; Walter Hampten, Minneapolis-Honeywell Regulator Co. and William Young, General Controls Co.

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The FYRITE Service Kit provides a complete set of accurate, quality-built combustion-testing instruments at the lowest cost. It includes the FYRITE CO_2 Indicator which is unsurpassed for fast, accurate flue gas analysis; and also contains the popular DRAFTRITE Draft Gauge and the TEMPOINT 200°-1000°F. Dial Thermometer.

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Furnace Vac Custom Deluxe Power Cleaner Mounted on 1-Ton Dual Wheel Truck.

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PRODUCTS OF

DECO MANUFACTURING CO.
903 22ND STREET - ROCKFORD, ILLINOIS
A DIVISION OF DELAMATER EQUIPMENT CO.

OIOC discusses 'One World' Association for Oilheat

THE THIRD meeting of the Oilheat Industry Organization Committee, composed of representatives of the National Fueloil Council and the Oil-Heat Institute of America, Inc., was held recently.

As a result of the progress made at this meeting toward establishing a single trade association for the oil-heating industry, an initial draft of a constitution and by-laws for the new organization, to be reviewed at their next meeting, will be prepared.

N. C. Group to have Class on fuel comparison Methods

MEMBERS of the North Carolina Oil Jobbers Association will be instructed in methods of determining the relative merits of heating fuels, it was announced.

This pilot class will be limited to 20 members and will stress cost comparison calculations. Similar sessions will be planned if this initial effort proves successful.

Calendar of Coming Events

SEPTEMBER

14–16—National Petroleum Assn., annual meeeting, Hotel Traymore, Atlantic City, N. J.

14–16—Florida Petroleum Marketers Association, semi-annual meeting, Barcelona Hotel, Miami Beach.

20–21—Ohio Petroleum Marketers Association, fall conference, Netherland-Hilton hotel, Cincinnati.

24–27—Pennsylvania Petroleum Association, fall convention, Pocono Manor Inn, Pocono Manor, Pa.

OCTOBER

9–11—Tennessee Oil Men's Association, fall meeting, Andrew Jackson Hotel, Nashville, Tenn.

9–12—North Carolina Oil Jobbers Association, Grove Park Inn, Asheville, N. C.

10–11—Indiana Independent Petroleum Association, Fall Convention, Trade Show, Hotel Severin, Indianapolis, Ind.

16–18—National Association of Oil Equipment Jobbers, Convention and Trade Show, Sheraton-Jefferson Hotel, St. Louis, Mo.

17–19—Iowa Independent Jobbers Association, Management Conference, State University of Iowa, Iowa City.

29–Nov. 4—Oil-Heat Institute, cruise and management conference, aboard the Queen of Bermuda, sailing from New York.

NOVEMBER

4– 7—National Oil Jobbers Council, meeting, Congress Hotel, Chicago.

14–16—American Petroleum Institute, 40th annual meeting, Conrad Hilton, Palmer House, & Congress Hotels, Chicago.

27–30—Northamerican Heating and Air-conditioning Wholesalers Association, Fall Convention, Statler Hilton Hotel, Detroit.

28–Dec. 2—American Society of Mechanical Engineers, Power Show, Coliseum, New York City.

JANUARY

18–19—Northwest Oil Jobbers Association, convention, Minneapolis.

FEBRUARY

13–16—American Society of Heating, Refrigerating & Air-Conditioning Engineers, International Heating & Air-Conditioning Exposition, International Amphitheatre, Chicago, Ill.

MARCH

6– 8—Canadian Air Conditioning & Heating Council, National Heating & Air Conditioning Show, Automotive Bldg., Exhibition Park, Toronto.

APRIL

23–26—Oil-Heat Institute, convention, Statler-Hilton Hotel, Washington, D. C.

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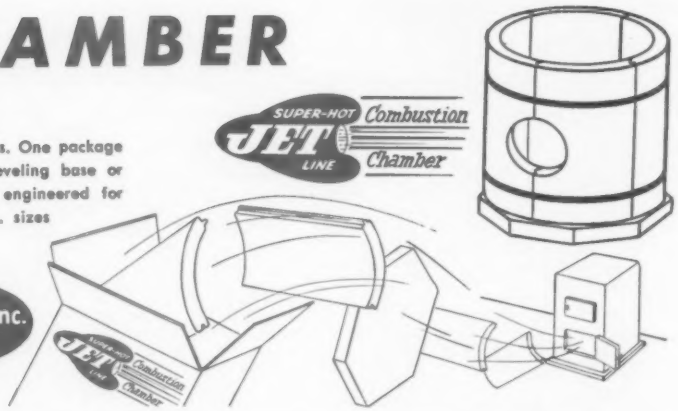

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Classified Directory Ad Space is available on National Basis

ADVERTISERS can now buy national Yellow Pages advertising in any market in the U. S. and Canada simply by placing a single order through one contact for as many directories as are wanted, it was announced.

The new service is comparable to advertising in regional editions of national magazines. The national space will be useful to manufacturers and refiners who might want to list their dealers and distributors in selected directories.

Sid Harvey Inc. announces new Store for New Jersey Shore

HENRY WOLLWERTH, President of Sid Harvey of N. J., Inc. announced the opening of a new Sid Harvey store in Eatontown, N. J., which will serve the Red Bank, Long Branch and Asbury Park areas with a full line of replacement parts. It will be managed by Warren Sackett, former manager of the Trenton store. This is the 49th Sid Harvey store.

The Lowell, Mass., store has moved to 191 Appleton Street and the Washington, D. C. store has moved to 1800 Adams Street, N. E.

Chrysler Airtemp announces management training Program

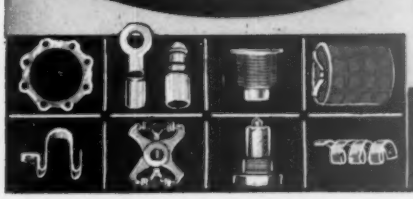
AIRTEMP DIVISION of Chrysler Corp., Dayton, Ohio, has announced the initiation of a one-year management training program designed to provide a reservoir of trained management for its sales department. One phase of the program which is designed for new employees will involve 13 weeks each in business and market research, sales administration, Chrysler branch operations and sales training.

The program's second section will offer training opportunities to six employees who aspire to executive sales

Receiving keys to a working replica of a 1901 Oldsmobile is Gabe Marin, president, Sun-Ray Burner Manufacturing Co., Jamaica, N. Y. Arnold Michelson, Minneapolis-Honeywell vice president, makes the presentation and Mrs. Marin looks on.

The car was top prize in Honeywell's "Win-A-Wagon" contest. Marin most accurately guessed the number of times a torture-test model of the R478 electronic flame safeguard would cycle before it was arbitrarily stopped at the end of the contest period. The contest was staged as a part of Honeywell's 75th anniversary celebration.

Servicing Oil Burners ?
YOU NEED THIS
FREE Catalog



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Ask him for a copy of Catalog #60, or write direct.

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positions. These employees will spend one week during the year learning about key sales departments.

Hopes are expressed that next year the management training program for the sales department could be expanded to Airtemp employees outside of that department.

Bell & Gossett Booklet on the "Hydronic Home" offered

BELL & GOSSETT, Morton Grove, Ill., has just published "The Hydronic Home," a 19-page booklet in full color illustrating how a modern circulated water system for heating and cooling provides both all-weather comfort for a home's occupants and a free hand to the decorator.

In the booklet are diagrams of the Bell & Gossett Hydro-Flo Hydronic system's elementary parts, including some technical data about these parts and their capacities.

Copies may be obtained free by writing to Bell & Gossett Co., Morton Grove, Ill. Ask for the "Hydronic Home" booklet.

W. Walton Woodroof (right), manager of training and service, American-Standard Air Conditioning Division, is shown with a group of the company's distributors who have been attending one of the week-long training schools at the Elyria, O., plant.

The newly-enlarged school is designed to instruct dealers and distributors in all phases of installation and service of central residential and light commercial warm air heating and airconditioning systems. The course takes five days including two days on warm air heating and three on summer airconditioning.

The Division is also planning a second season of traveling airconditioning clinics. These one-day courses will be held in 40 cities across the United States and are expected to attract 800 students.

Booklet by Carrier helps sell year-round Airconditioning

A NEW promotion kit prepared by Carrier Air Conditioning Co., Syracuse, N. Y., for its dealers and distributors features a booklet designed to help them sell the concept of year-round airconditioning to homeowners.

Entitled "Carrier 12-Month Home Air Conditioning," the booklet explains that true airconditioning is more than summer cooling and should provide control of humidity, odor re-

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Service men encounter a variety of problems in their work. This book presents simple and practical answers to many of the common goat-getters. Many are actual problems and describe the steps taken to correct them. It's a comprehensive collection of facts; one which we've been building up for years. An 8½x11 inch book with 60 pages. .....Price **$2.00**

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A practical guide on oilburner installation. Covers, step by step, all phases of the installation of the domestic oilburner. 64 pages illustrated with numerous diagrams, charts and photographs. 8½ x 11 inches in size. .....Price **$2.00**

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Don't Gamble with Less than a Product with Years of Proven Performance

No combustion chamber compares with INSTANT-GLO —

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★ **TOP PERFORMANCE**
Cannot lose shape or fall in. INSTANT-GLO's thick insulating brick wall gives maximum sound absorption. It's rugged . . . outlasts combustion chambers of inferior materials.

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Cuts, handles, assembles easily. Rigid when installed.

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Rugged INSTANT-GLO resists vacuum cleaner suction. No vulnerable parts of heater to burner exposed.

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LYNN, MASSACHUSETTS

moval and air cleansing as well as temperature control on a year-round basis.

The kits are being mailed to Carrier distributors, who will supply dealers.

Gorton issues valve Catalog and trouble shooting Hints

A CATALOG has been prepared by Gorton Heating Corp., Cranford, N. J., on its fast venting valves for steam heating systems. The catalog contains pictures of each of a variety of styles of vapor equalizing valves for radiators and air eliminators for mains. Accompanying copy and illustrations highlight features and operating characteristics of the valves, along with a drawing to show a system using the correct valve sizes.

Also available is a fact sheet containing trouble shooting hints on low pressure steam systems. Subject covered is the reasons for and ways to correct noises in steam heating.

A. L. Equipment Co., Franklin Park, Ill., appointed distributor of petroleum handling pumps and equipment in the Chicago area for Gorman-Rupp Co., Mansfield, O.

William P. Haney appointed manager of the Boston office for Watts Regulator Co., Lawrence, Mass. He succeeds *Robert J. Tesar*, recently appointed sales manager.

Wooten Oil and Fuel Co., Goldsboro, N. C., recently opened a new office and bulk-plant. The Grand Opening was held on June 23 and about 500 visitors attended. During the celebration Sterling D. Wooten, president, was given a diamond studded tie-clasp in recognition of his 30 years affiliation with Shell Oil Co.

77 oilheating Men honored by Aladdin, Igniter Awards

THROUGHOUT the years, the Oil-Heat Institute of America, Inc., has honored outstanding men of the industry with two awards—the Aladdin Lamp and the Igniter Award. Historically, the Aladdin Lamp is the older of the two. It was in 1954, that the Distribution Division began giving the Igniter Award to those rendering outstanding service to the marketing segment.

Of the 77 men recognized by these awards, six have received both. They are Hollis Albert, Fred Beckwith, Fred Heaney, Carl Jonswold, T. R. Loizeaux, Sr., and Herbert Spade.

The recipients have been:

Aladdin Lamp recipients: Paul Addams, A. T. Atwill, R. S. Bohn, C. J. Bassler, W. R. Brannan, Leod D. Becker, Edward Bailey, R. H. L. Becker, J. A. Collins, C. F. Curtin, Wallace Capen, C. R. Collins, T. A. Crawford, Preston Crewe, Stanley Czarnecki, Clarence Dieter, Frank Dewey, Frank Faust, Fenton Fisher, E. Fleishman, Robert Gray, Morgan J. Hammers, Fred Haab, Clark Hastings, Alfred Hegeman, A. E. Hess, George Hochstein, Lionel Jacobs, W. A. Kemp, C. E. Lewis, C. W. Lang, Charles Lockwood, Earl Marr, W. A. Matheson, Gabe Marin, J. W. Owens, Verne Resek, Frank P. Scully, Ross Sherman, F. E. Spencer, W. J. Smith, Larry Sibley, Harry F. Tapp, Walter Tant, Ray G. Whipple, and George H. Wolf, Jr.

Honored with the Igniter Award: William Allman, Henry Auld, Jack Becker, Joe Berry, Wiley Butler, C. M. Blickensderfer, Tom Carson, James Dyer, Everett Elliott, E. L. Fentress, Fred Griffin, Edward Hacker, Charles Holloway, William F. Kenny, Jr., Roy C. Lindsay, Edmund Marquard, B. L. Ray, John Scott, Henry Schwartz, Douglas Smith, Francis Schuster, Lavern Schaetzel, M. N. Vining, W. G. Warrington, and Catherine Woodbury.

40 VALUE-PLUS MODELS FROM ½ TO 2 TONS

Bodies you can depend on—best built in the industry—with many "plus" features at no extra cost. Compare Morysville's wide selection feature by feature with *any* others. You're sure to find "More for your Money in Morysville".

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Fig. No. 500

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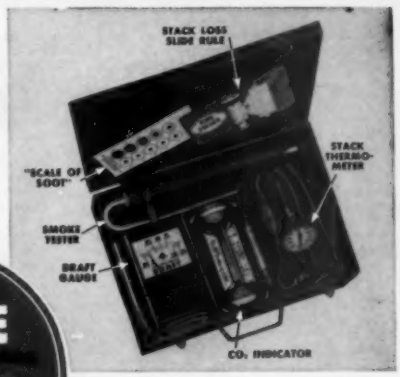

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...PACEMAKER FOR PROFITS from Expert Tune-up Service

Making the most of your ability to do an expert tune-up job will pay you big dividends in gaining you competitive leadership and neighborhood recognition of your competence as a heating expert. The combustion-testing kit shown here contains precision-made quality instruments with which you can make fullest use of your know-how in making a fuel conservation survey, checking a burner for wornout parts and needed repairs, or running an efficiency test to close a replacement deal.

The kit contains the well-known FYRITE CO_2 Indicator, the versatile MZF Draft Gauge, the all-metal TEMPOINT Stack Thermometer and the sensationally new TRUE-SPOT Smoke Tester. Now, for the first time, you can adjust an oil burner quickly and expertly for highest CO_2 without objectionable smoke... do away with guesswork, and "hit and miss" fumbling in adjusting for clean firing. The "Scale of Soot" which comes with the TRUE-SPOT tells you the limits of permissible smoke for various burners and types of heating systems. This amazingly simple method of oil burner adjustment is the greatest advance in combustion testing since the introduction of the FYRITE. You will be proud to be among the first to own this "up-to-the-minute" combustion-testing kit.

For complete information on this and other new tune-up equipment— write for Bulletin 777

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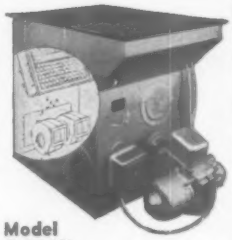

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POSITION WANTED: Service Manager with aggressive organization, 30 years knowledge on domestic oil burners and some on industrial. A capable trouble shooter with a thorough knowledge of heating. Can furnish references. Box 1525.

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THE POSITIVE LEAK PREVENTER

Truck Talk

by Chet Cunningham

GOOD THROTTLE RESPONSE and maximum fuel economy on your fueloil delivery trucks depends to a large extent on whether the distributor vacuum diaphragm assembly provides the proper spark advance in relation to the density of the fuel charge.

Champion Spark Plug Company reminds us that no tune-up is complete without a careful check of diaphragm action. On a long run, a V-8 engine will pull 15" of manifold vacuum. The vacuum diaphragm, being subjected to this pull, shifts the spark a considerable number of degrees past the normal centrifugal limits. This means good gas mileage on your delivery rigs, and good economy.

The picture here shows a diaphragm that needed a pull of 24 inches of mercury just to start it advancing the spark—not good economy. A look at the diaphragm showed that it was not porous or ruptured, but it had been badly contaminated on the atmospheric side. This led to sticking on one side of the diaphragm, and it wouldn't budge even with 24 inches of pressure. The result was no spark advance where there should have been, and poor gas mileage.

Be sure to check the diaphragm after a tune-up. If you don't have a bench tester, do it this way. Remove the distributor cap and disconnect the vacuum line at the diaphragm assembly. Then, move the distributor plate, to which the diaphragm arm is attached, with your fingers to full advance. Hold at full advance position and with your other hand, press a wet finger against the opening where you've disconnected the vacuum line. Release your finger from the pate—and it should remain in full advance position. If it snaps or creeps back to the retard position, the diaphragm is probably faulty. Two exceptions: older Chevrolets with different vacuum arms, and rigs with full vacuum distributors not incorporating centrifugal advance.

Euclid reminds us that an engine can overheat in several spots, even though the temperature gauge works and reads normally. The trouble may be because the cylinders can't transmit their heat to the coolant.

As you know, scale builds up on the inside of water jackets through deposits of minerals and salts, and prevents the heat from penetrating into the coolant.

For example, scale and deposits around valve ports, can overheat your valves to the point where they will warp and burn beyond repair. Yet this overheating probably won't even show up on your temperature gauge. This same type of hot spot can score cylinder walls, overheat pistons, and eventually ruin crankshafts.

The best way to avoid this type of trouble is good cooling system maintenance. Here are 22 cooling system faults to check:

Pressure radiator cap leakage or fouling. Loose baffle plate on radiator top tank. Plugged overflow tube. Bent or clogged radiator fins. Radiator core or tank seam leakage. Dirty or damaged fan blades. Radiator tubes clogged with scale, rust, or oil muck. Rust and scale deposits in radiator bottom tank. Loose radiator mounting bolts. Loose hose clamps. Worn or loose fan belts. Hoses deteriorated or collapsed. Water pump leakage.

Worn water pump that lets air into cooling system. Drain cock leakage. Coolant leaks into engine through cracked head, loose head bolts or leaking head gaskets. Rust or scale formation in cylinder head. Thermostat faulty—prevents complete filling with coolant. Exhaust gas leaks into system through a cracked head or loose cylinder head joint.

Euclid says check these points every six months, use a good anti-freeze or rust inhibitor, have fewer problems.

Aluminum bumpers may be next. Winter road tests have now been made on prototype aluminum bumpers. They are made from new heat treated aluminum alloys and have both strength and are easy to form. They receive a duplex nickle-chrome finish—you won't be able to tell them from chrome bumpers. But they weigh far less. If they work out in passenger car use, the next move will be onto trucks, where weight is vital.

Road signs may soon say: "Follow Blue Paving for U.S. #30." Certain synthetic materials are now available to make multicoloring of special routes and highway lanes practical. The plastic material is mixed with rock or sand and forms a one-inch thick upper layer on paving.

PULSATION TROUBLE?

LET *Monarch* Help You!

Monarch has eliminated "Pulsation" in thousands of so-called "hopeless" cases. Why not see if we can do the same for you?

Whatever your problem, try Monarch and see why Service Men and more than 400 Oil Burner and Furnace Manufacturers all over the world agree: Monarch Nozzles continue "First Choice of the Industry."

HERE'S WHAT YOU NEED . . .

1. **Monarch F-80-AR series 80° angle nozzle**
2. **Recommended Monarch F-57 Air Cone and H-451 Stabilizer**
3. **Solenoid shut-off Valve for nozzle line**

Set the Monarch equipment according to catalog "O" recommendations and see positive results. These are proven combinations used for years in thousands of installations. They definitely minimize if not completely cure ordinary running pulsation in small highly restricted units.

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Don't jumble nozzles loosely in your tool box if you expect them to be usable. Carry them securely in a sturdy well-built Monarch Nozzle Box. Available for 24 or 48 nozzles. Also, cabinets holding 480 nozzles.

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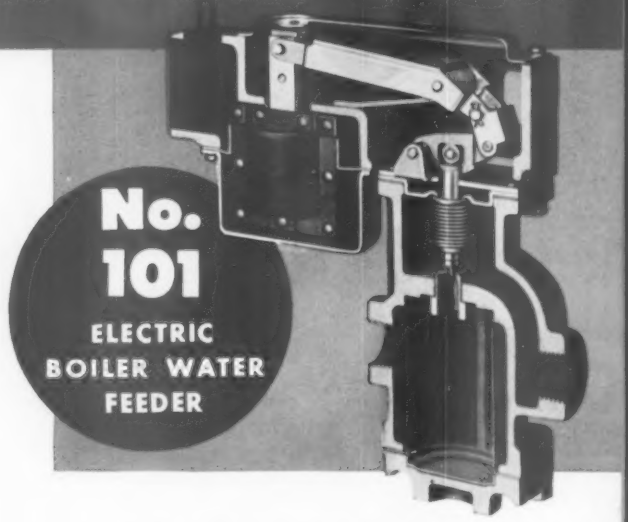
REMEMBER: It costs more to clean a nozzle than to replace with a new, precision, guaranteed-uniform Monarch Nozzle.

GOING STRONGER THAN EVER!

More and more of these Electric Water Feeders are being added to McDonnell Low Water Cut-offs

Here's why:



When you add this No. 101 Electric Water Feeder to a McDonnell No. 67 or 69 Series or any other McDonnell "twin switch" Low Water Cut-off, you kill two birds with one stone:

1 You give owner something he needs and likes—the fully automatic boiler water level control of a combined water feeder and low water cut-off.

2 You end unnecessary shutdowns, and the headaches they cause . . . end them because the No. 101 is right there to keep the boiler going through periods when otherwise the cut-off might stop the burner.

The story is simple: Every McDonnell No. 67 or 69 Series Cut-off is provided with an extra "feeder" switch that is practically shouting for a No. 101. Many No. 101's have been hooked up to these "feeder" switches on oil fired jobs. But despite the fact that they are going stronger every year, the big oil fired market has scarcely been touched.

That is one big field, but it is only half the story. There are also a large number of gas fired boilers, equipped with No. 67 and 69 Series cut-offs. These Cut-offs have been crying in vain for the No. 101 . . . but now comes the good news:

New model with transformer now takes care of the gas boilers

A new and equally effective electric feeder—No. 101-24V—has been developed for gas boilers having low voltage control circuits. It has a special low voltage coil and comes complete with a companion 24V transformer. Regulations prevented wiring line voltage into a terminal box having a low voltage circuit, but the 101-24V completely overcomes this objection by making *both* circuits low voltage.

Note the simplicity of piping and wiring the No. 101. See it on display at your wholesaler's. Ask for latest bulletin.

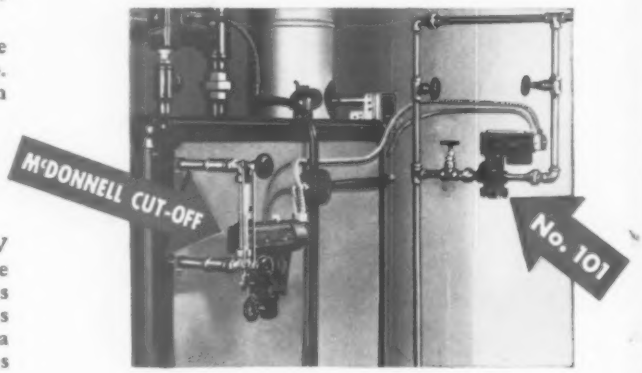
McDONNELL & MILLER, Inc.
3500 N. Spaulding Ave., Chicago 18, Ill.

Doing One Thing Well

Ordinary Solenoid Valves won't do

The No. 101 was specially designed to perform essential functions that cannot be properly handled by a conventional solenoid valve! The No. 101 valve is spring loaded to give it powerful drip-tight closure against any city pressure, and a compound leverage system assures positive valve opening by the solenoid. A button for manual feeding—exclusive feature—facilitates filling, makeup, and testing. It has the same time-tested valve mechanism and built-in strainer found in other McDonnell Feeders. Straight-through ½ inch inlet and outlet pipe connections simplify installation.

No. 101 and 101-24V are for boilers up to 5000 sq. ft. capacity; maximum steam pressure, 25 psi; maximum water supply pressure, 150 psi.



Makes the boiler water level as automatic as the firing

Nothing could be simpler: Simply insert the No. 101 in any horizontal section of cold water piping above or below water level. Wire it into the "feeder" terminals of any McDonnell "twin switch" Cut Off.

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Boiler Water Feeders